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PAPER TRADE JOURNAL

VOL. 124, NO. 3 JANUARY 16, 1947

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Australian Paper Mill to Extend Its Markets
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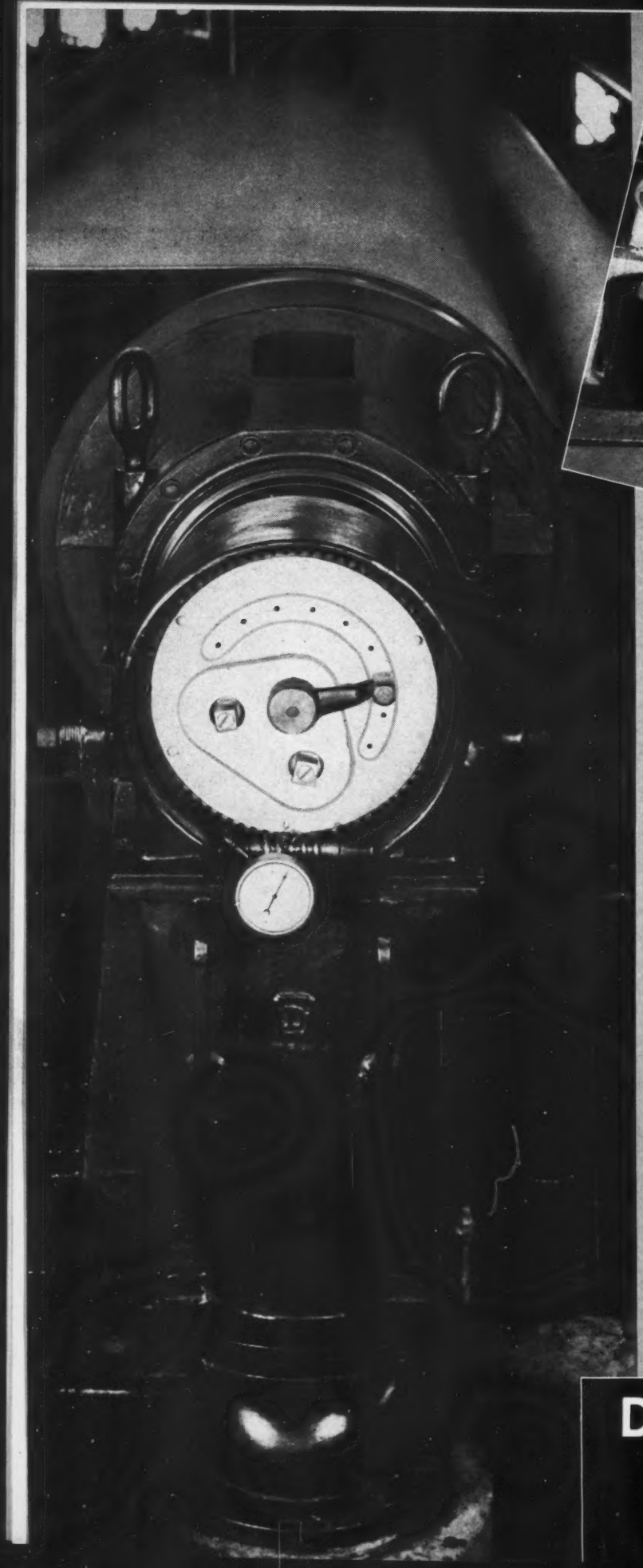

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PAPER TRADE JOURNAL

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CALENDAR OF COMING EVENTS

January 20, 1947—National Association of Waste Material Dealers, Western Division, Meeting, Hotel Sherman, Chicago.

January 29-31, 1947—Canadian Pulp and Paper Association, Annual Meeting, The Mount Royal, Montreal, P. Q.

January 29, 1947—Southern Pulpwood Conservation Association, Annual Meeting, The Ansley Hotel, Atlanta, Ga.

February 23-27, 1947—The American Paper and Pulp Association, Annual Meeting, The Waldorf-Astoria, New York City

February 24-27, 1947—Technical Association of the Pulp and Paper Industry, Annual Meeting, The Commodore, New York City.

February 25, 1947—New York Association of Dealers in Paper Mill Supplies, Inc., Annual Banquet, Hotel Commodore, New York City.

February 25, 1947—New York State College of Forestry Alumni, Annual Luncheon, Hotel Commodore, New York City.

March 31-April 1-2, 1947—National Paper Trade Association, Annual Convention, The Waldorf-Astoria, New York City.

May 22-24, 1947—American Pulp and Paper Mill Superintendents Association, Annual Convention, Edgewater Beach Hotel, Chicago.

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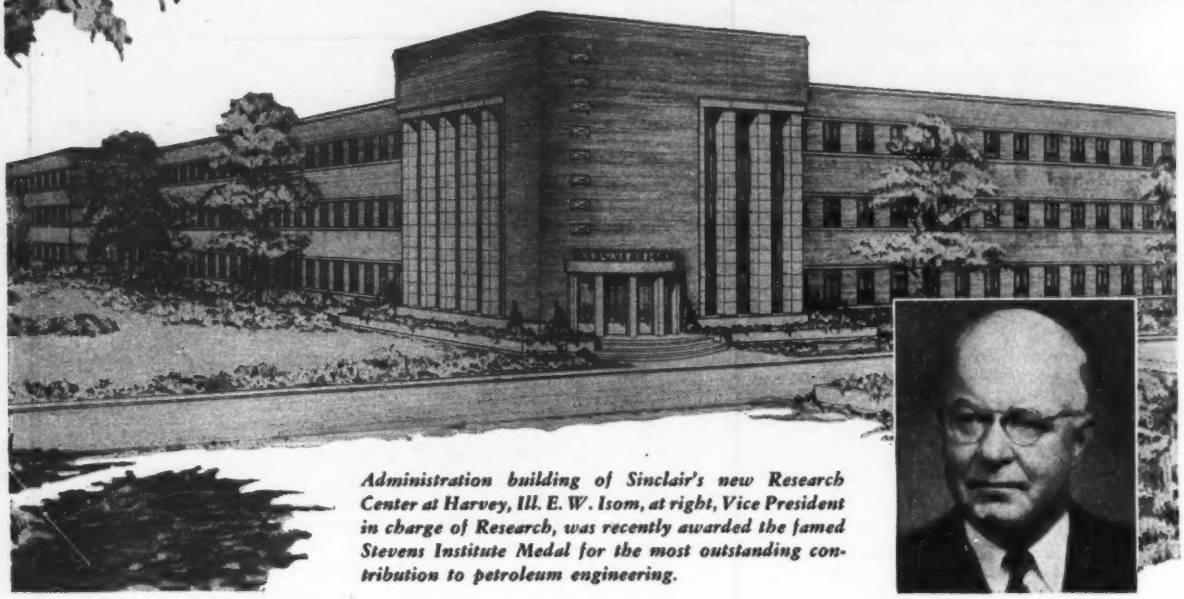

Administration building of Sinclair's new Research Center at Harvey, Ill. E. W. Isom, at right, Vice President in charge of Research, was recently awarded the famed Stevens Institute Medal for the most outstanding contribution to petroleum engineering.

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PAPER TRADE JOURNAL

January 16, 1947 Vol. 124, No. 3

Title Reg. U. S. Pat. Off.

Box Car Bottleneck Chokes Pulp Supply

MONTREAL, Que.—Canada's pulp and paper industry is not yet out of the woods on its pulpwood supply, key to whether the industry can continue to operate at effective capacity. Though the 1946-1947 logging season to date has been most favorable in point of volume of pulpwood cut, the big trouble continues to be difficulty in getting enough box cars to move a portion of the cut to the mills. Though most mills are understood to have enough wood on hand to last until April or May, some may be hard pressed before that time.

On other fronts the situation is favorable. An official of the Pulp and Paper Association indicates that already more than 50 percent of the cutting program has been completed and given "average breaks" the industry should be able to complete its record pulpwood program by the end of the 1946-1947 season. This would mean a pulpwood cut of over 8.5 million cords for the east-of-the-Rockies area, some six percent higher than last season's record cut.

The industry, as a whole, has completed half of its 1946-1947 logging cut on schedule. This figure was close to 4.5 million cords.

Behind the industry's ability to make such an excellent pulpwood cutting showing, is the fact that woods labor has been greater than anticipated. Despite the loss of prisoner-of-war labor, over 74,000 men were engaged in cutting on limits in mid-December.

Ontario, where the early labor shortage was most acute, has succeeded in attracting considerable western and Quebec labor and its position has eased considerably.

Though more box cars have been made available this year than in the past, and the railroads are making every effort to better that performance, there are not enough railroad cars to go around. Through December 14, 1946, over 185,000 boxcars of pulpwood (including export pulpwood) had been loaded, 34,000 more than in the corresponding 1945 period. But the industry could have used many more, particularly now that peak winter requirements are at hand.

As a result, the industry fell short of moving the planned 350,000 cords of pulpwood in the two months period which ended December 15th, leaving this rail shortfall plus the balance of the season's cut of 1,350,000 cords to move by rail by next spring.

The big question remains: can this cut be moved by rail in time to prevent curtailment in domestic pulp and paper production? Certain mills may find themselves pinched for lack of wood earlier than others though it is felt by the association that arrangements could be made to divert wood from the "have" mills to the "have not" mills. It is hoped, however, that this expensive and uneconomic method of distribution can be avoided.

Though the industry is confident that the balance of the 1946-1947 pulpwood cut program will be achieved, it is admitted that this can only be accomplished by extending the cutting season well into the winter. This has been done for the past five years due to the tight situation in woods labor. In pre-war years cutting was generally completed by the end of December. Now the industry has to cut the haul concurrently in winter months when cutting is most difficult. However, this is said to be the only way that sufficient pulpwood can be made available to keep Canada's $700 million pulp and paper industry operating at capacity.

Newsprint Output Set New High With 22.3 Per Cent Over 1945

Production in Canada during December, 1946, amounted to 341,951 tons and shipments to 340,125 tons. Production in the United States was 62,088 tons and shipments were 62,054 tons. The output in Newfoundland was 26,381 tons and shipments were 41,261 tons making a total North American production of 430,420 tons and shipments of 443,440 tons. Total production in December 1945 was 365,840 tons and shipments were 356,801 tons. Total production in December 1946 exceeded that of any December on record.

NEW YORK—The North American output of newsprint paper in 1946 was 5,276,953 tons, of which 4,143,392 tons were made in Canada, 770,890 tons in the United States, and 362,671 tons in Newfoundland. The News Print Service Bureau, which compiled the record, points out that the Canadian output was 27.1 percent greater than in 1945, that in the United States was 6.4 percent more, with a gain of 9.0 percent in Newfoundland, making a total increase of 960,604 tons, or 22.3 percent. Production in the year 1946 was also higher than in any preceding year.

Stocks of newprint paper at the end of December were 87,774 tons at Canadian mills, 15,218 tons at United States mills, and 58,750 tons at Newfoundland mills, making a combined total of 161,742 tons compared with 174,762 tons on November 30, 1946 and 143,061 tons at the end of December 1945.

Pulp Imports For 1946 Passed Half-Million Tons

WASHINGTON—Imports of wood pulp into the United States from overseas totaled 5,763 short tons during the week ended December 26, 1946, the Pulp and Paper Unit, Office of Domestic Commerce, Department of Commerce reported.

The aggregate quantity of wood pulp imported from overseas sources from January 4 through December 26 amounts to 533,783 short tons. Of this total, 431,652 tons were imported from Sweden as against 102,131 tons from Finland.

Dyke Heads Polio Fund Group

NEW YORK — George L. Dyke of Robert Gair Co., Inc., will direct the 1947 fund raising drive for the National Foundation for Infantile Paralysis in the paper field in the Greater New York area.

Wholesale Trend Rises A Third in 11 Months

WASHINGTON — Wholesalers' sales of paper and paper products totaled $96,633,000 for the first eleven months of 1946, thirty-three percent over those for the corresponding months of 1945, according to the Bureau of Census, based on figures from a group of reporting firms.

November sales of this group showed $7,934,000, a decline of eight percent from October, but 25 percent above those of the previous November. Inventories of the group showed a gain of three percent in November over October, and were 19 percent above those of November a year ago.

San-Nap-Pak To Make Paper at Mount Tom

HOLYOKE, Mass.—Sale of the Mount Tom Sulphite Pulp Company to the San-Nap-Pak Manufacturing Company, Inc., most important development in the paper industry in this vicinity in many years, has been confirmed in a statement from A. H. Showalter, vice-president and general manager of the Mount Tom company. The mill, located near the OxBow of the Connecticut river on the west side of Route 5 at Mt. Tom Junction, will become a paper manufacturing plant well as a pulp mill in about two months.

The negotiations for the sale were completed at a recent meeting of the Mt. Tom board of directors in Boston and the new owners are to take possession February 1. San-Nap-Pak is understood to have been one of five bidders for the mill. The new owners will take the entire pulp output of the mill, about 60 tons of paper-making pulp per day, for the manufacture of facial tissue.

The Mount Tom Sulphite Pulp Company, one of the pioneers in the chemical woodpulp industry in the United States, has been in continuous operation for 65 years. Its product has been the raw material on which many of the best known paper mills in the United States have built their trade and reputation.

The Mount Tom mill has long devoted its daily production of 50 tons to the high-grade specialty field, of which glassine, soft absorbent tissue technical tissue, and rayon grades of bleached sulphite are a few. For the past six months the production has been increased to 55 tons and plans are under way to step this up to 60 tons or more, devoting the entire production to the soft absorbent grade required by the new owners.

A. H. Showalter, vice-president and general manager of the Mount Tom Sulphite Pulp Company for the past 16 years, will remain with the new owners in the same capacity and will retain his present staff and personnel throughout the plant.

The San-Nap-Pak Manufacturing Company Inc., with executive offices in New York city, is one of the large manufacturers of facial tissues, sanitary napkins, and hospital supplies, operating converting plants at Wheelwright, Mass., and Rockland, Del., with a daily capacity of over 125 tons of finished paper. The entire production of bleached sulphite from the Mount Tom mill will be used by San-Nap-Pak in its operations in the two mills. The officers are N. E. Hoit, president, and Harry Preston, treasurer.

Plans are under way for the immediate erection of three paper machines in the Mount Tom mill and a later expansion program calls for the erection of one or more new buildings on the Mount Tom site in which the most modern machines will be installed to carry out the entire process of papermaking from the spruce logs to the finished paper.

Some parts of the three new machines have already been received and the three are expected to be ready for operation in a couple of months, necessitating hiring of about 20 papermakers. They will make paper from about 25 tons of the mill's daily pu output; the balance will go to the Wheelwright and Delaware mills.

Army to Resume Work On Holyoke Flood Wall

HOLYOKE, Mass., Jan. 11—Holyoke paper manufacturers, plagued annually by spring floods, were jubilant today as Mayor Henry J. Toepfert was notified by Lt. Col. K. M. Pattee of the Army Corps of Engineers that authority has been received from Washington to proceed in South Holyoke and Springdale, with the flood wall extension project which was suspended last summer due to the moratorium on U. S. civil works projects, issued by President Truman.

The colonel told Mayor Toepfert that the Army engineers propose to initiate construction during the coming spring, with plans and specifications ot be released to prospective bidders early in March. Col. Pattee stated that the bids should be opened the following month.

The flood wall extension project is estimated to cost two and a half million dollars, of which Holyoke must contribute $100,000 for preliminary work on the wall, such as getting easements, rights of way, and clearing the river bank. A 20-year bond issue of $81,500 was authorized by the aldermen last July and the $18,500 balance was taken from the surplus account to raise the $100,000 figure. However, City Treasurer Joseph E. Lucey has not yet floated the bond because the project was stopped, Mayor Toepfert said he will ask Treasurer Lucey to call for bids on the bonds immediately.

Fraser and Restigouche Assume Own Sales

NEW YORK—Fraser Paper, Limited, with mills at Madawaska, Me., and sales offices in New York City and Chicago, has taken over the sale of its paper formerly sold by Fraser Industries, Incorporated. James G. Conley is sales manager and John R. Cryan is assistant sales manager.

Restigouche Company Limited, with mills at Atholville, N. B., also has undertaken direct sales to United States customers instead of to Fraser Industries, Incorporated. Future correspondence and inquiries to this company are received care Fraser Companies, Limited, at 1010 St. Catherine Street West, Montreal 2, P. Q., Canada.

Flambeau Mill Sold To Kanas City Star

MILWAUKEE, Wis. — Sale of the Flambeau Paper Company of Park Falls, Wis., to the Kansas City Star for an amount close to $3,000,000 was disclosed here Friday, January 10, with the arrival here of Earl Robertson, treasurer of the Star, to close the deal, according to the Milwaukee Sentinel.

The Flambeau Paper Company, including a paper mill, several power plants and dams on the Flambeau River, has in the past been manufacturing some ground wood paper and considerable sulphite paper of the office stationery type.

The newspaper, it is understood, will devote one of the mill's two paper machines to production of newsprint, and will retain the other in sulphite paper manufacture. The mill has a capacity of about 75 tons of paper per day.

Change in ownership was effected through transfer of the 49,200 odd shares of Flambeau Paper Company common stock at $60 per share, according to Leon F. Foley, Milwaukee attorney and managing director of the paper company, since last March, when Johnson B. Angle, its president, died. This would bring the purchase price to $2,952,000. The paper company was founded in 1890.

The Star explained it still would be necessary to draw on its present newsprint contracts, since its requirements are nearly three times the mill's capacity even should it be fully converted.

There will be no change in the mill's management, it said. Leonard Kuehl, executive vice-president and general manager, continues as head.

CPA Discards Directives On Caustic Soda Shipments

WASHINGTON—The Civilian Production Administration has now decided against issuing any directive governing distribution of caustic soda in 1947, it was said by Frederic Arden, government representative, following a meeting this week with an industry committee representing chlorine-alkali producers.

The action would have aimed at assuring caustic soda users delivery during the year of at least 65 percent of receipts last year. The action is now in the discard in the belief that results are being accomplished in part by voluntary action of the producers.

Some members at the meeting reported they were shipping to all 1946 customers during 1947, at least 64 percent of caustic soda shipped to them last year. One producer reported a daily cut-back of chlorine production amounting to about 50 tons and a cut-back of caustic soda production of 55 tons per day, owing to lack of pressure tank cars.

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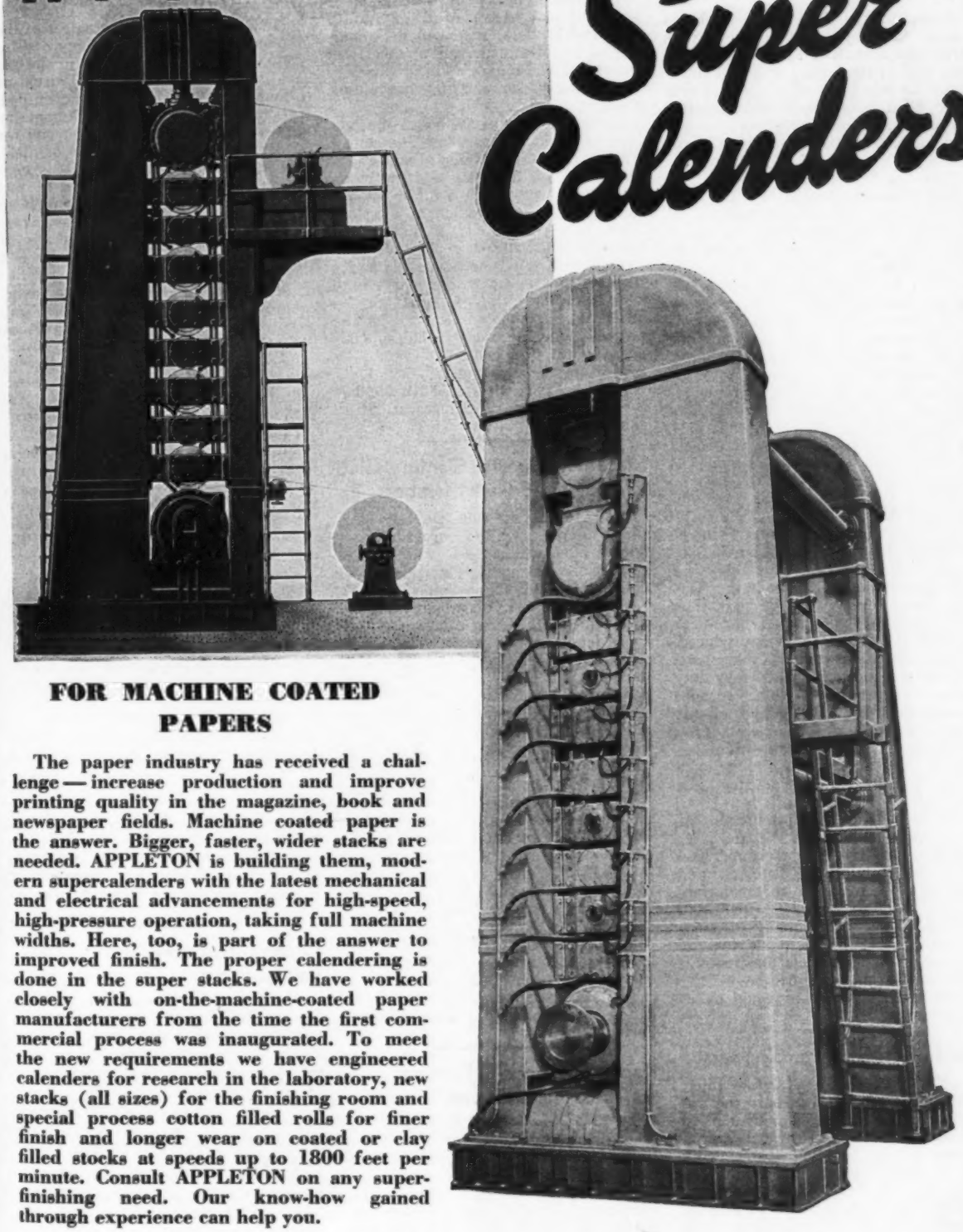

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St. Regis Bag Output Reaches 600 Million

ALLENTOWN, Pa. — The nation's cement industry has used more than three billion multiwall paper bags since that type of packaging was first introduced 25 years ago. Laid end to end, these filled bags would reach around the world 53 times, according to Gardiner Lane, advertising manager of the St. Regis Paper Company, N. Y.

Speaking before the Exchange Club in Allentown, on January 14, Mr. Lane revealed that the contribution of St. Regis Paper Company to multiwall bag production in 1946 approximated 600 million units in contrast to the industry's total output of some 300 million bags in 1935.

"It was in the Lehigh Valley area that the multiwall paper bag, now one of the company's major products, was first accepted and adapted for commercial shipments of rock products," Mr. Lane told the meeting. "And today in this great industrial area not only St. Regis multiwalls but St. Regis plastics and printing papers find extensive markets."

Twenty-five years ago, Mr. Lane declared, A. M. Bates, founder of the Bates Valve Bag Corporation introduced an all-paper self-closing bag to be used in conjunction with valve bag packing machinery. This container was used commercially for the first time in the Lehigh Valley, where one-fifth of the world's cement now is produced.

Today St. Regis Paper Company is the largest manufacturer of heavy duty multiwall paper bags, which account for approximately 50 percent of the company's total sales volume.

Explaining the company-wide expansion, which has brought it to a leading position in the industry, Mr. Lane said:

"Starting with the production of newsprint at Deferiet, N. Y., and later specializing in lightweight groundwood papers for catalogs, directories, and magazines, then adding the manufacture of kraft pulp, kraft paper, and multiwall paper bags, finally developing the great Panelyte plant for the production of laminated plastics—St. Regis has become one of the world's leading manufacturers of wood cellulose products."

McKee Retires After 52 Years

EAST RUTHERFORD, N. J.—Miller, Tompkins & Company report the retirement of their president, Francis J. McKee. Mr. McKee is the only living member of the original paper sack firm founded 52 years ago. He started in the business in 1888 as a compositor with Cornell, Bingham & Co. one of the early manufacturers of paper flour sacks. This firm was later changed to W. A. Bingham & Co. In 1894 in company with Albert O. Miller and States D. Tompkins, he founded Miller, Tompkins & Company, of which he has been president for over 25 years.

Expect Large Attendance at Western N.A.W.M.D. Meeting

CHICAGO—The Western Division of the National Association of Waste Material Dealers, Inc., which is holding an important meeting at the Hotel Sherman, on January 20th, promises to be in every sense a pre-convention meeting.

At the meeting of the board of directors held in California last September, President White appointed Louis Lippa as convention chairman and the meeting on January 20th will be in the nature of a get-together of Western Division members for a dinner and entertainment and a report will undoubtedly be made covering plans for the big March Convention which is to be held on the 17th, 18th, and 19th and from present indications will be the largest Convention ever held in Chicago by the Association.

Morton A. Friedman, 5429 West Roosevelt Road, Cicero 50, Illinois, has the arrangements and reservations in charge.

Marathon Quarter Century Club Welcomes 25 New Members

MENASHA, Wis.—The Quarter Century Club of Marathon Corporation inducted 25 new members at its fourth annual banquet at St. Patrick's school hall here Wednesday evening, January 8. More than 300 persons attended the banquet. Leo E. Croy, company executive vice-president, awarded the new members the club certificate which indicated that each member is to receive a gold watch in the near future.

The principal address of the evening's program was "Rich Reward of Cooperation" by the Rev. Robert S. McCarthy, head of the Manitowoc Catholic Apostolate. He pointed out that in the present day world of turmoil, people are more and more searching for peace of mind, security of income, family life and community life.

W. Roy Welch, one of the new member of the club gave a talk on "Forward Together," in which he stressed the importance of giving counsel and help to the younger employes so that general progress can be speeded up.

A new committee was elected to handle Quarter Century Club activities during the year.

Kaplin Succeeds Seiberling As Thos. Phillips Head

AKRON, Ohio — Len C. Koplin has been named president of the Thos. Phillips Company to succeed the late Charles W. Seiberling. Mr. Koplin has been an employe and officer of the company for sixty years — recently serving as vice-president and assistant general manager.

F. Arthur Howland, general manager, was elected vice-president, and Lisle M. Buckingham, Akron attorney, a director to fill the vacancy caused by the death of Mr. Seiberling.

Claghorn Sees Trend Continuing Upward

Arthur U. Claghorn, president of the Pioneer Paper Stock Company of Chicago, was quoted this week in the annual survey of the Chicago Journal of Commerce as saying that the outlook for waste paper values will continue on an even if not an upward trend for at least the first six months of 1947, barring unforeseen events. This condition, he asserts, is prompted by two factors the tremendous volume of business currently booked by the paper board mills and a dire shortage of wood pulp for which waste paper is a direct substitute.

Mr. Claghorn said that recent favorable weather conditions have kept collections far above normal for this time of year but that the most severe winter months are ahead of us. In view of these future inclement weather possibilities, the Chicago paper executive believes that the current "free flow" of the bulk or common grades such as mixed paper, news and old containers should bog down in the next three months. If this happens he expects the consuming mills, of necessity, to be forced to draw from existing inventories which eventually must for the most part be replaced.

Those grades which command a higher value because of quality and their more direct relationship to woodpulp, as a substitute, cannot, in his opinion, but command a premium over and above the prices formerly set by the Office of Price Administration. This, Mr. Claghorn stated, has been brought about principally by an inadequate supply of domestic woodpulp and because of a delayed action in the lifting of OPA controls on this commodity. In his opinion, had OPA granted relief on the price of wood pulp when it was requested, the Scandinavian countries who have always enjoyed a market in this country, might have shipped an appreciable tonnage prior to the freezing over of their ports.

Crane Distributes Payroll Bonus

DALTON, Mass.—Employees of Crane & Company received extra compensation pay this month, based on their length of service. For hourly workers the rate of pay per hour as of December 1 was used as a base rate in the computation, and for piece workers the average hourly earnings for the year, computed to December 1 was used as the base rate.

The length of service classifications begin at from three to six months, for which an employee will receive one quarter of a 40-hour week's pay. From three to six months the length of service and amount of compensation will be correspondingly increased up to two years or more of service. Employees in the last classification will receive two 40-hour weeks' pay.

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On their way into the chipper, logs are regulated in their progress over spiked rolls through each roll's independently operated Reliance Splash-proof Gearmotor. Logs can be quickly started, stopped, positioned or reversed as the operator sees fit through automatic control.

In the hydraulic barker, whole logs are turned continuously by a Reliance Adjustable-speed Motor and a differential reduction gear.

In 1943, the pulp and paper industry learned of the vital part played by Reliance Motors in the amazing efficiencies and economies introduced by the Weyerhaeuser hydraulic log barker and chipper at Everett—largest in the world. Now, Weyerhaeuser again makes news—with even faster, more efficient hydraulic processing of whole logs at Longview. And here, again, it's Reliance Motors supplying the power to make new records possible!

Each of the rugged, dependable motors Reliance sent to this job is designed to meet the speed and torque requirements of the operation involved. Those which power the barker are fully protected against water spray and bark. All are adapted to remote control and split-second timing.

Here is more evidence of Reliance's ability to produce integrated, co-ordinated drives, complete with motors, brakes, reducers and controls, and designed—both electrically and mechanically—to meet the requirements of a job exactly. Drives planned this way mean greater speed, higher production, easier operation.

Splash-proof Reliance A-c. Motors operate door and entry chains, lift skids, lift arms and positioning knees. A single operator maintains finger-tip control of the log from the Reliance-Clark bench board.

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RELIANCE A-C D-C MOTORS

"Motor-Drive is More Than Power"

NYU Opens Course On Pulp and Paper

NEW YORK — Twin courses in Pulp and Paper Technology and the Printing Inks will be offered in the spring term by New York University's Division of General Education. The courses are directed to salesmen as well as to those in the industry connected with the handling and processing of paper products and inks.

Pulp and Paper Technology will be offered for the first time this spring. The course was organized by Harold Annis of the Oxford Paper Company in collaboration with R. G. MacDonald, Secretary of the Technical Association of the Pulp and Paper Industry (TAPPI). Mr. Annis will coordinate a schedule including fifteen lectures given by experts.

For the convenience of registrants, the meeting place has been set at Willkie Memorial Building, 20 West 40th Street. Class meetings will be once a week, Thursday evenings, 6:15 to 8:00 p.m., beginning February 6.

The full schedule of guest lecturers in the course in Pulp and Paper Technology includes:

February 6—Harold M. Annis, Oxford Paper Company, "Introduction to Pulp & Paper Industry."

February 13—Dr. L. T. Stevenson, American Paper & Pulp Association, "History & Economics of the Pulp & Paper Industry."

February 20—Vance P. Edwardes, International Paper Co. and president Technical Assn. Pulp & Paper Industry, "Manufacture of Sulfite Pulp and Groundwood."

March 6 — John B. Calkin, Union Bag & Paper Company, "Manufacture of Alkaline Pulps—Kraft and Soda."

March 13 — Chester G. Landes, American Cyanamid Company, "Paper Sizing and Loading—Materials, Methods and Effects."

March 20 — Rex Vincent, Bulkley Dunton Pulp Company, "Beater Room Practices — Paper Stock Refining Methods and Effects."

March 27 — Thomas Murphy, Mead Corporation, "The Paper Machine and Paper Mill Finishing and Converting Operations."

April 10—Robert H. Simmons, U.S. Government Printing Office; Byron Whemhoff, West Virginia Pulp & Paper Company, "Paper Testing and Printing Service Problems."

April 17—Frank W. Egan, Consulting Engineer, "Coated Paper Manufacture — Conversion and Machine Coated."

April 24—Dr. E. F. Carmen, Consulting Chemist, "Printing Methods and Printing Inks."

May 1—Charles Pitkin, Doubleday & Company, "The Manufacture of Books and Related Paper Problems."

May 8—W. E. Griswold, Executive Director, Lithographic Technical Foundation, "Paper for Offset Printing."

May 15 — Gerard Lerocque, New York Daily News, "Groundwood Printing Papers — Newsprint and Gravure."

May 22—J. D. Malcomson, Robert Gair Company, "The Manufacture and Conversion of Paperboard."

May 29—R. G. MacDonald, Secretary, Technical Association Pulp & Paper Industry, "New Developments in Pulp and Paper Manufacture and Use."

Gould Names Twelve to Polio Fund Committee

NEW YORK — Twelve co-chairmen have been appointed and have undertaken to assist Harry E. Gould, president of Reinhold-Gould Incorporated, New York paper merchant, who recently accepted the chairmanship of the National Foundation for Infantile Paralysis appeal among the members of the fine paper and greeting card industries.

The twelve prominent figures in the paper trades who are cooperating with Mr. Gould are: S. T. Baron, Royal Paper Corporation; Joseph O. Bulkley, Dunton & Company; John Franzen, Hammermill Paper Company; Louis Gailer, Whiting-Plover Paper Company; Samuel Garner, J. E. Linde Paper Company; Charles A. Gordon, Oxford Paper Company, Inc.; George F. Gray, Henry Lindenmeyr & Sons; W. P. Heilman, S. D. Warren Company; Joseph A. Moses, Falulah Paper Company, Inc.; John P. Osborne, The Champion Paper & Fibre Company; Paul K. Roth, H. P. Andrews Paper Company; F. H. Savage, International Paper Company.

Indicating that the highest goal that the paper industry had ever been called called upon to reach was considered as a "challenge" by his co-leaders, Mr. Gould announced that campaigning would soon begin among companies, executives of companies and "down through the employee groups" in every firm in the trades, "firm by firm," "employee by employee."

T & H Calendar Portrays Capitol Buildings

BOSTON — The 1947 calendar of the Tileston & Hollingsworth Company is beautiful, as always. It shows, in addition to the Capitol at Washington, D. C., pictures of State Capitols and State Houses of New England. The calendar sheets are printed on papers made by Tileston & Hollingsworth at their Hyde Park mill.

Barr Joins Ohio Boxboard

NEW YORK — The Ohio Boxboard Company has appointed Lockwood C. Barr as manager of the company's New York sales office. Mr. Barr was formerly with the Robert Gair Company, and assumes his new position after serving three years as a lieutenant in the Navy.

New Group to Foster Forestry Research

MADISON, Wis. — A group of top scientists in forest products research and utilization met here on January 3rd to launch the Forest Products Research Society, a non-profit corporate international organization for the interchange of information and furtherance of wood research. Organizers are: Dean G. A. Garrett, Yale University; J. H. Tigelaar, Haskelite Mfg. Corporation; G. M. Hunt, U. S. Forest Products Laboratory; Dean G. D. Markkworth, University of Washington; C. B. Hemming, U. S. Plywood Company; D. N. Hammond, Weyerhaeuser Pulp Division; W. H. Swanson, Kimberly-Clark Company; K. G. Chesley, Crossett Lumber Company; J. F. Hamilton, Perkins Glue Company; F. W. Gottschalk, American Lumber & Treating Company; B. F. Grondal, University of Washington; Harold S. Crosby, Northern Hemlock and Hardwood Manufacturers Association; and W. J. Baker, U. S. Forest Products Laboratory.

The purposes of the society are to facilitate interchange of information through abstracting and publishing results of research; to promote standard test methods and procedures; to sponsor meetings for interchange and discussion of ideas as well as broadening of acquaintanceships in the fields of forest products research. Eligible for voting membership are individuals engaged in planning, supervising or conducting forest products research, development or utilization. Associated and supporting memberships are also provided for.

F. W. Gottschalk, Chicago, was elected president; Dean Garrett, New Haven, vice-president; and W. J. Baker, Madison, secretary.

Conceding that increased importance of scientific advancement in the chemical and mechanical treatment of wood is now taking place, this organization is indeed timely and may well become an influence upon timber bearing communities where pulp, paper, lumber, plywood, fiber and chemical branches of the forest industries stand to benefit. Refinements in methods and a broader understanding of wood characteristics will advance the production phase of many new products.

New York Forestry Alumni To Lunch at Commodore

NEW YORK—The annual luncheon of the pulp and paper alumni of the New York State College of Forestry will be held Tuesday, February 25, at noon, in the South Room of the Commodore hotel. Formal announcements are being sent to all alumni who were on the mailing list. Anyone not receiving an announcement but planning to attend the TAPPI Convention, or be in the vicinity at that time, should advise Walter B. Morehouse, chairman, at First and Essex, Harrison, N. J.

INTERESTING FACTS ABOUT PAPER

As a precaution against fraud, tickets to sporting events are made by laminating two pieces of paper to a brightly colored sheet to form a paperboard. When the ticket is torn by the ticket taker, the colored center can be spotted. An additional precaution is often taken by coloring the surface sheets with fluorescent colors or inks.

INTERESTING FACTS ABOUT METHYLENE BLUE 2B CONC

Methylene Blue 2B Conc. is a clear, greenish, basic blue. It possesses good solubility and is suitable for all types of coloring—beater, calender, and coating. It is extensively used on kraft, tissue, boxboard, wrapping, and poster paper, to produce shades varying from light blues and grays to deep and medium blues. It is used on both sized and unsized papers. When treated with tannic acid, the light fastness is materially improved.

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Whale Will Produce Sensitized Paper

MENASHA, Wis. — Organization of the Whale Safety Paper Company, to manufacture sensitized surface design safety papers from bleached chemical wood pulp or cotton fiber content base stock, was revealed January 6. R. Gerald Whale is named as president and general manager.

The company has five directors: Mr. Whale; Hamilton Vose, Jr., Chicago; Mrs. George M. Gilbert, Neenah; S. N. Pickard, Neenah; and Dr. George Pratt, Jr., Menasha. Other officers elected by the directors are Mr. Vose, vice-president; Joseph F. Dempsey, Oshkosh, secretary; and Harry W. Rawson, Waupaca, treasurer.

Mr. Whale resigned recently as a director and sales executive of the Gilbert Paper Company. Mr. Vose also is president and general manager of Berkshire Papers, Inc., Chicago, while Mr. Dempsey is a member of the Oshkosh law firm of Bouck, Hilton and Dempsey, and Mr. Rawson is president of the Farmers' State Bank of Waupaca.

The surface design safety paper which the campany will manufacture is used in bank checks, coupons, tickets and other protective papers. The firm commenced operation January 2 in Menasha. It has purchased the safety machine formerly owned by the Gilbert Paper Company. It will continue to manufacture its product at the Gilbert plant under a working arrangement with that company until it can move into a building of its own, probably late next spring. It is considering locating in Waupaca, Wis.

The first stockholders' meeting, at which the directors and officers were elected, was held January 4 at Valley Inn, Neenah.

Nekoosa Edwards Promotes Three to Vice-Presidencies

PORT EDWARDS, Wis.—John E. Alexander, president and general manager of the Nekoosa-Edwards Paper Company, on December 26 reported the promotion of three executives to newly-created vice-president posts. Those named were Neil E. Nash, assistant to the vice-president; Charles H. Reese, manager of manufacturing; and Adam C. Remley, general sales manager.

Mr. Alexander also announced a $42,000 contribution by the firm to the fund for construction of the community's natatorium. In two previous donations the company had given amounts totaling $93,000 to the fund.

Ralph Hall Receives a Watch

ERVING, Mass.—Ralph Hall has been presented a wrist watch by the Erving Paper Mills, in recognition of thirty years' service. He is assistant superintendent at both the Erving and Orange plants.

German Production Less Than Quarter Normal

WASHINGTON, D. C.—German paper production in the 77 factories in the British zone in Germany now averages from 168,000 to 180,000 tons annually, compared with 700,000 tons in normal years, according to American sources. Shortages of coal and raw materials have prevented the other 73 mills from resuming or continuing operations.

Wood and chemicals are obtained with great difficulty. Since all paper mills are deprived of all wood reserves, a temporary curtailment of production is possible, particularly if transportation facilities are impaired during the winter months. The cutting of trees and transportation of the wood to the mills has been a problem during recent months. In addition, wood is urgently required by the mining and building industries, and some quantities of lumber must be exported to provide payment for necessary imports of food.

Chemicals used for sulphate pulp manufacture are practically unobtainable at present. Stocks of sulphate pulp, which were imported from Sweden, are almost exhausted. Further deliveries from that source are not possible.

Practically every industry or branch of industry suffers from the scarcity of papers. The building industry needs paper for roofing felt and cement bags. The food and chemical industries need large quantities of wrapping paper and packing material. The railroads and theaters need paper for tickets, and the administration in the area requires about 200 tons of paper for new forms on which income tax declarations are to be made.

Ancram Mills Still Idle In Labor Dispute

COHOES, N. Y. — The labor controversy at the Ancram Paper Mills, Columbia county, is still deadlocked with no further action expected until after the holidays. Representatives of the International Brotherhood of Papermakers and company officials plan a conference with John A. Rooney, federal concilliator, about Dec. 27, when an effort will be made to settle the trouble which involves about 125 persons. The labor organization is understood to be seeking an hourly raise of ten cents and a union shop. The firm is reported to have offered an increase of two cents honrly, a vacation of one week and six paid holidays.

Thomson Resigns from Bruning

CHICAGO — C. E. Geddes Thomson, for ten years manager of the Chicago Coating Division of the Charles Bruning Company, and technical director of the company, has resigned. He may be reached at his home at 3200 Thayer St., Evanston, Ill.

Mosinee Completes Mill Improvement

MOSINEE, Wis.—The Mosinee Paper Mills Company is completing four phases of its $300,000 improvement program. They include a new stock chest, new blow tank, installation of a continuous washing system for pulp, and construction of an additional liquor furnace.

The improved Dekered stock chest in the beater department was put into operation January 5. It more than doubles the capacity of the two former chests replaced by the new equipment. Forty men, working in three eight-hour shifts daily for five weeks, installed the chest, which will insure more constant quality of pulp.

The new blow tank is housed in a new addition, 34 feet square, and will be placed into operation this month. It will take the pulp directly from the digesters. It has a capacity of 515 tons of stock, including liquor. The stock will be washed and filtered four times in a new Oliver Brown stock washer, the largest vacuum rotary filter made.

Work on the new liquor furnace, started early last summer, is expected to be completed in February. The furnace is of the complete water-wall type and will replace three smaller smelters now in use.

These improvements are part of plans that were made over the years and on which actual construction was deferred until materials became available after the war, according to Norman S. Stone, vice-president and general manager of the Mosinee company. He said that the company now will be better able to meet competition in the kraft paper field.

Ward Sets Up Program To Develop Research

MERRILL, Wis.—A new program of research development inaugurated at the Ward Paper Company places R. A. Diehm, with twenty years' experience in applied research and product development, head of the new department as technical director. For the past year Dr. Diehm was technical director of the Cuneo Press, Chicago, and served the Container Corporation of America in a similar capacity for three and a half years. His early experience was gained with the Rohm & Haas Chemicals, Philadelphia, where he spent thirteen years.

Miss Carola Trittin is the new research chemist. Miss Trittin comes to Merrill from the American Coating Mills, Elkart, Ind. She spent fourteen years in the laboratories of the Appleton Coated Paper Company. During the war she joined the staff of the Container Corporation of America, specializing in wartime research.

Floyd W. Nienow is the Ward company's new chief engineer. Mr. Nienow was formerly associated with Pennsylvania Salt Co., Philadelphia, Pa., as sales engineer for seven years.

GUIDE TO

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New York Exchange Now Lists Marathon Stock

WAUSAU, Wis.—Marathon Corporation, makers of food packaging and other paper products, was listed Monday, January 6, for the first time on the New York Stock Exchange.

Early last month the Exchange approved the listing of the 1,300,000 shares of Marathon common. In New York for the ceremonies attendant to the listing were F. J. Dvorak, president of the Wisconsin Valley Trust Company of Wausau, and Leo E. Croy, Neenah, executive vice-president of Marathon in charge of all United States operations having to do with paper, paper board and converted products. L. F. V. Drake, New York City, formerly of Wausau and a director of Marathon, also was present.

D. C. Everest, president and general manager of Marathon, announced that the Bankers Trust Company of New York and the Wisconsin Valley Trust Company are co-transfer agents for Marathon stock, and that the National City Bank of New York and the Harris Trust & Savings Bank of Chicago are co-registrars.

Coffman Is Optimistic On General Aniline Business

BINGHAMTON, N. Y.—Joe W. Coffman, vice-president of the General Aniline & Film Corp. in charge of the Ozalid Division, is optimistic over prospects for the new year.

"There is general agreement among our executives that the industrial crisis has passed," said Mr. Coffman. "We have adjusted wages of employes and prices of our products and have replaced our war business with civilian business.

"Our new plant, which will double our paper production capacity, will be completed by summer, and we plan to double production of our machines. Demands for our products, in this nation and overseas, is greater than we expected. We expect to continue growing steadily."

Interchemical Elects New Heads

NEW YORK — Ernest W. Pittman has been elected to the newly created office of chairman of the executive committee of Interchemical Corporation. Mr. Pittman has served as president of the corporation since 1937. Mr. Pittman will continue to be fully active in the management of the corporation.

Mr. Herbert B. Woodman has been elected president. Mr. Woodman, formerly associated with the law firm of Cravath, Swaine & Moore, joined the Interchemical organization in 1936 and became vice-president and secretary the following year.

Office Workers Elect Verrier

KIMBERLY, Wis.—J. F. Verrier was elected president of the Papermill Office Workers union Thursday noon, January 2, at the clubhouse. The union won a bargaining election on December 13, 1946. It has become affiliated with the Papermill Workers union here. Both are independent unions.

Reese Talks Costs to Union

NEKOOSA, Wis.—The cost of manufacturing paper was discussed Thursday evening, January 2, by C. H. Reese, vice-president in charge of manufacturing at the Nekoosa-Edwards Paper Company, at a meeting of Local 52, Pulp, Sulphite and Papermill Workers.

Commerce Department Seeks Closer Source Contacts

WASHINGTON—Field representatives of the Department of Commerce have received instructions to build up their contacts with the pulp and paper industry, as a means of obtaining industry data which the Department formerly got more readily from war-time sources.

During the war, it was pointed out in these instructions, facts were available in Washington, such as the monthly statistics on pulpwood, wood pulp, paper and paperboard, collected by War Production Board; also a large number of key industry men were in the Capital on war duty and were in constant touch with industry matters.

"In the future," the Department has advised its staff, "adequate information will depend to a substantial degree upon having basic information on underlying conditions in the industry, especially as such conditions vary from region to region. It is particularly important to have comments on prospective conditions.

"There is only one way that adequate information can be obtained and that is from key men in the industry."

Noble Joins Brown Staff

NEW YORK — John W. Noble has joined the Brown Company to concentrate his efforts in the field of market research and analysis at the company's New York City sales office. Formerly, Mr. Noble performed market research for the Lennen & Mitchell advertising agency. Prior to his association with Lennen & Mitchell, he did economic research for a U. S. Army Military Government Unit. A graduate of New York University,

FINANCIAL RECORD OF THE WEEK

New York Stock Exchange

High, Low and Last for Week Ending January 11, 1947

STOCKS

	High	Low	Last
A. P. W.	5¼	5⅛	5⅛
Armstrong Cork Co.	55	52⅞	53⅜
Celotex Corp.	31¼	27	27
Celotex Corp., pf.	20½	20½	20½
Certain-Teed Products Corp.	21	18⅝	18⅝
Certain-Teed Products Corp., pf.	....	....	....
Champion Paper & Fibre Co.	26	24	24
Champion Paper & Fibre Co., pf.	110¾	110	110
Congoleum Nairn Co.	29	27	27
Container Corp. of America	45½	42½	42½
Crown-Zellerbach Co.	33⅛	31¾	31¾
Crown-Zellerbach Co., pf.	128	107½	128
Dixie Cup Co.	33	30¾	31
Dixie Cup Co.—A	51	49½	51
Flintkote Co.	36⅜	33¾	33¾
Flintkote Co., pf.	....	....	....
Robert Gair	7⅜	6⅞	7
Robert Gair, pf.	21	20½	20¾
International Paper Co.	53¾	48¼	48⅝
International Paper Co., pf.	104	103½	103½
Johns-Manville Corp.	135	131¾	132⅛
Johns-Manville Corp., pf.	121	121	121
Kimberly-Clark Corp.	24	23¼	24
Mac Andrews & Forbes	38½	38½	38½
Mac Andrews & Forbes, pf.	....	....	....
Marathon Corp.	26½	25¾	25⅞
Masonite Corp.	61½	56	57
Mead Corp.	19¾	19	19
Mead Corp., pf. 4¼	....	....	....
Mead Corp., pf. 2	49½	48⅝	48⅝
National Container Corp.	37	34	34¾
Paraffine Companies, Inc.	75	70	70
Paraffine Companies, Inc., pf.	....	....	....
Rayonier, Inc.	24¾	22¾	22¾
Rayonier, Inc., pf.	37	36⅝	37
Ruberoid Co.	60	55	55
Scott Paper Co.	49¾	47¾	47¾
Scott Paper Co., pf.	100¾	100	100
Sutherland Paper Co.	45½	45	45
Union Bag & Paper Corp.	30¾	27¼	27¼
United Paperboard Co.	14¾	13½	13½
U. S. Gypsum Co.	93½	89½	91½
U. S. Gypsum Co., rt. wi.	11⅛	9⅝	10⅜
West Virginia Pulp & Paper Co.	40⅛	39¾	39¾
West Virginia Pulp & Paper Co., pf.	112⅜	112⅜	112⅜

BONDS

Abitibi Pulp & Paper Co. 5s '53	....	....	....
Celotex Corp. 3¾s '60	....	....	....
Certain-Teed Products Corp. 5½s '53	....	....	....
Champion Paper & Fibre Co. 3s '65	103⅝	103⅝	103⅝
International Paper Co. 5s '47	....	....	....
Mead Corp. 3s '66	....	....	....

New York Curb Exchange

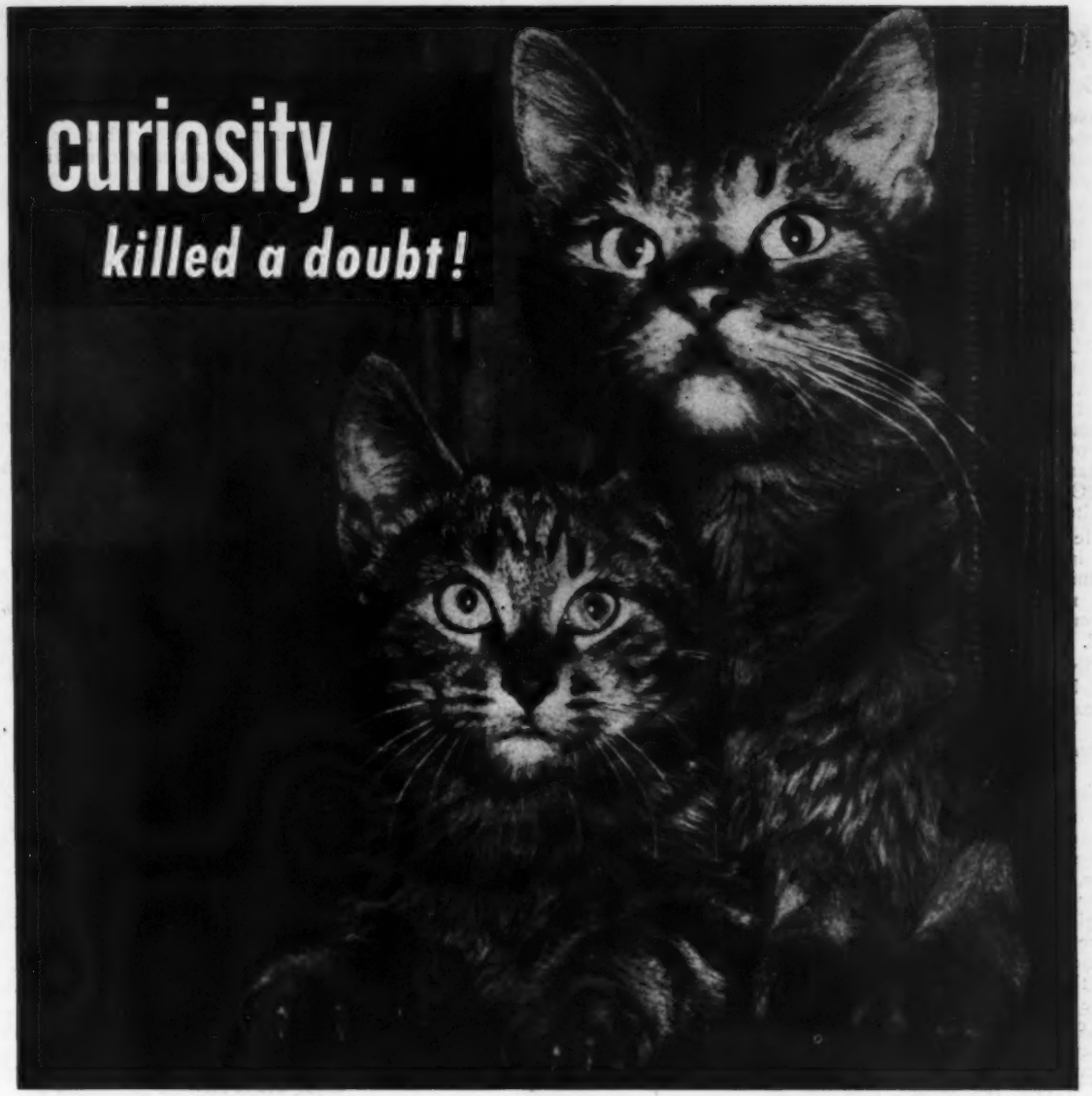
High, Low and Last for Week Ending January 11, 1947

STOCKS

	High	Low	Last
Great Northern Paper Co.	44	43½	43½
Hummel-Ross Fibre Corp.	27	26	26
St. Regis Paper Co.	10	9⅛	9⅛
Taggart Corp.	8¾	8⅜	8⅜

BONDS

American Writing Paper Co. 6s '61	....	....	....



MANY manufacturers of fine cotton content paper were doubtful but curious when they first tried Rayco Linter Cotton as a furnish. It was only after successful in-the-mill runs proved that it was an ideal base material, easily adaptable to a variety of processes and types of equipment that they recognized the importance of this Rayco engineered contribution to the supply shortage.

They learned from experience, too, that Rayco Linter Cotton was always delivered clean, ready for the cooker operation, and that it speeded production by eliminating rag room operations and reducing cooking time.

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RAYCO LINTER COTTON

Urges Canada To Curb Its Exports of Pulp

TORONTO—"If we used our resources to the limit and processed our pulp and paper in Canada, the pulp and paper industry could employ 214,000 more men, which would make a total of 331,000," William F. Gibson, representing the Dominion Cellulose Co. and the National Cellulose Co. of Canada, told the royal commission on forestry this week.

"The dollar value on pulp sent to the U. S. is a small fraction of what it would be if the pulp were processed here. We can do this processing as well as it can be done in the U. S.," he claimed.

Toward this end he suggested the Ontario Government lend support of an Ontario pulp and paper research institute.

He said Premier Drew had promised an institute for textile research in Hamilton. "But of cotton, wool, silk and rayon, only wool and rayon raw materials are Canadian," Mr. Gibson said.

"Even most of the wool is imported," he said. "We need an institute to sponsor Ontario pulp and paper making. The forestry department of the University is not interested in pulp and paper after the wood has been loaded on cars.

"Only by making sure that we in Ontario have an adequate supply of raw materials which originate in Ontario, no matter what the shortages in other countries, can we insure that our people are going to be profitably employed," he continued. "We read of Canadian university graduates leaving for the United States. This will continue as long as we are losing out on our exports."

Raw materials for wood products, he said, were being shipped out at one-half a cent per pound, and finished wood products brought back costing 10, 20 and 30 cents a pound, he said.

He attacked the tariff system. "My products on entering the U. S. have a 95 per cent tax. Similar U. S. products coming in here have only a 22½ per cent tax," he stated.

Emphasizing that forests are on crown land and belong to every one, he suggested that exports of raw materials which were being finished in the U. S. by U. S. labor, and sold back to Canada at U. S. Profits, be stopped until Canadian manufacturers were sufficiently supplied.

"From 1895 to 1930, over 95 per cent of the merchantable timber was removed without replacement, and in 1930 over 75 per cent of the former spring-fed streams dried up in season," stated Dr. Norman Douglas, reading before the commission a brief from Grey county.

"From 1930 to 1940 one farm in every 15 was abandoned as a farm home, and the population decreased 39.57 per cent," he added. This was due, he said, to soil erosion, faulty argricultural methods, premature draining of the swamps and the rocky, sharly sloping nature of the ground.

"The extreme drop suggests that Grey county would make an ideal special-type survey area," Mr. Douglas said. This, he said, Grey county felt would lead to a reforestation program which would increase the value of the county by $40,000,000.

Waste Prices Rise In Midwest Markets

CHICAGO — Substantial increases in dealers prices of waste paper, following the rise in prices at paper mills recently, were showing up in the market this week. As now listed, dealers are reported paying $1.20 to $1.25 a hundredweight for folded news, against previous quotations of $1 to $1.05. This ratio of increase is in evidence in the old containers where advances from $1.30 to $1.40 from $1.15 to $1.25 a hundred were quoted. Magazines were said to be up to $1.10 to $1.35 from a former price of from 90 cents to $1.15 while brown kraft which a short time ago was getting $1.25 to $1.75 is being quoted in this area at figures ranging from $1.75 to $2.25. Whites were said to be bringing $3 to $4 against an earlier price of $2.25 to $2.50. Miscellaneous mixed papers alone remained unchanged at 70 to 80 cents a hundredweight.

Receipts were said to have increased, partly because of the reaction from clearance of the heavy snowfall which hampered collections a week ago. Mill demand was reported firm at $20 a ton for No. 1 mixed, $35 for news and $36 for corrugated.

Holyoke Told Tariff Hearings Will Open January 22

SPRINGFIELD, Mass. — Representatives of the paper industry in the Connecticut valley were notified today that hearings will begin January 22 in Washington to determine what tariff concession can be made on their products to foreign countries.

Five boards of representatives of the Tariff Commission and the State, Agriculture and Commerce departments have been named to sit simultaneously to canvass some three thousand products of American factories for possible concessions.

Among the nations interested in obtaining agreements are Russia, United Kingdom, Canada, France, Belgium and Czechoslovakia.

The hearings will probably end a month before the world trade conference scheduled for April during which United Nations members hope to formulate a world trade program to help recovery in war-torn nations and to guarantee a market for record production in the United States.

Newsprint Still Is In Short Supply

MONTREAL—Although paper production is much greater than in pre-war years it has not caught up with a demand accelerated by war conditions, Neil B. Powter told the Montreal Purchasing Agents' Association at the Mount Royal Hotel this week.

Mr. Powter, who is sales promotion manager of the Howard Smith Paper Mills Limited, said that it is difficult to estimate just what the demand will be at the present time and that there are a number of factors contributing to the continued increase in the use of paper.

There was a pronounced increase in industrial activity forcing plants to use more paper in connection with their expanding personnel; government restriction on business enforced an additional need of paper for the purpose of filing reports; and a backlog of paper orders built up through the war years also had its affect on paper supply.

Mr. Powter declared that many large firms which, in the past, sent out catalogues advertising their wares, now are re-newing that campaign. Formerly, as production dates varied between firms, the demand for paper for this purpose was staggered throughout the year. Today, all firms using that type of appeal are anxious to get their catalogue on the market as soon as possible. The cumulative effect has produced an impact on the market, he stated, throwing it out of kilter.

Mr. Powter suggested possibilities that might lead to the easing of the market.

Should controls go off and prices be allowed to rise, he said, demand might drop. Alternately, if a business recession occurred paper demand might drop; or if the demand proves steady it could be met by producers installing more paper-making equipment.

The real solution, he augured, will likely rest with a combination of at least two of these factors.

Canadian Pulp Manufacturers Raise Prices in Dominion

MONTREAL—Canadian pulp and manufacturers have increased the price in Canada of bleached sulphite by $8 a ton. Unbleached sulphite has been increased $6 a ton, unbleached kraft advancde $12 a ton and groundwood pulp raised $4 a ton. The new prices are effective immediately.

Prices of fine papers also have been increased, sulphite bond being advanced $15 a ton and rag grades $20 to $30 a ton. The domestic price of kraft liner board, which is sold on a 1,000 square foot basis, also has been increased an average of $10 a ton on the various grades. Box board prices have been raised an average of 10% with advances ranging from $7 to $7.50 a ton.

See WHAT WATER CAN DO TO PAPER PROFITS!

TAKE WHITE WATER—Those pulp fibres it contains are valuable . . . far too valuable to waste. Indeed, to many a paper mill the water itself is precious, and must be recycled again and again.

The White Water Reclaimer, designed for the paper industry by Permutit,* not only recovers a high percentage of fibre and filler from this "waste" water, but permits re-use of the water.

TAKE PAPER QUALITY—Impurities in process water can mar the quality of your paper product . . . may mean rejects, with loss of profit and goodwill. Permutit Water Conditioning *removes* dirt, iron and other impurities from the water supply . . . gives you a cleaner, brighter sheet.

If you have a water problem, there's no better time to get after it than now, and no better way than Permutit Water Treatment. Modern, economical Permutit equipment gives the paper mill *complete control* of water quality.

Write for information to The Permutit Company, Dept. PT1, 330 West 42nd Street, New York 18, N. Y. or Permutit Co. of Canada, Ltd., Montreal.

*Trademark Reg. U. S. Pat. Off.

PERMUTIT

WATER CONDITIONING HEADQUARTERS

Purchasing Agents See Little Cheer

NEW YORK—Little of an immediately encouraging nature is discovered in the paper prospect by the Nation's purchasing agents. In a report prepared by the Paper Committee of the National Association of Purchasing Agents under the supervision of Chairman T. A. Corcoran, Courier-Journal and Louisville Times Co., Louisville, Ky., it is declared that "The new year opens with the general paper situation as tight as ever, and, statistically, at least, with no relief in sight. But U. S. production, with the exception of newsprint, continues at a record-breaking pace. If the expected business recession occurs in 1947, supply should catch up with demand sometime during the year. One experienced paper merchant says he expects this to take place as early as the first quarter. Another, however, mentions late Summer as the time.

"Surely, we can look forward to a gradual improvement in the supply-demand situation. A balance could be reached quickly if the business recession should get under way early in the year. Perhaps a good policy to follow would be to purchase only for known requirements and to watch inventories closely.

H. L. Weber, Fibreboard Products, Inc., San Francisco, declares that "You'll probably pay somewhere between $115.00 and $125.00 for bleached pulps, but some find themselves in the $165.00 bracket. Unbleached pulps are somewhat lower, running from $95.00 to $100.00 a ton, although some may have crawled out on the $132.00 branch. The Swedes are trying to get their Government to increase export ceilings, which would result in an increase of the lower prices we have shown, and it seems reasonable to assume that by midyear, the Finns, who are quoting the extremely high prices, will be forced by competition to get more into line. People would not now be paying the prices the Finns are asking if they were not 'pulp hungry.'

"Here is the picture of the supply situation of purchased or market pulp. Total inventories now are 30% less than last February, and there will be no large last open water shipments from the Scandianvian countries to build them up as occurred last year. In the unbleached grades, inventories are even worse, being down between 40% and 45% from last February, and, to make the matter worse, we are using about 17% more of these pulps than are being made available to the market.

"During 1946, we received about 20% of Sweden's exports. Unless we get back to our prewar average of 35% or 40% of their exports, we will be more 'pulp hungry' this year than we were last.

"When your inventories are down to the minimum, you can't keep on using more than you get. That is why some people are not going to have their orders satisfied. We are 'pulp hungry' now, and we can be very 'pulp hungry' at least half, if not all of 1947, if demand stays at the present high rate."

Stuart Edgerton, United States Rubber Company, New York, reports "Conditions in the kraft paper industry did not warrant a very 'Merry Christmas' for kraft paper buyers, and there is not much in the outlook for 1947 to warrant wishing them a 'Happy New Year.'

"The production of paper continues at a high rate for all mills that produce kraft paper. There are not so many of these as there were twelve months ago, and losses hurt a good deal more today than they did when there were more mills to produce.

"The demand for kraft paper continues at a very high level, and there are many prewar specifications that are still being filled by the purchase of substitutes. 1947 presents a very rough pathway for the buyers of kraft paper and items produced from kraft paper.

"Insofar as prices are concerned, apparently, the paper producers have made up their minds to gather in all the profits possible under present conditions. It would be unfair to say this applied to every producer, but certainly the present trend of prices would seem to indicate that the consumer is to pay all that traffic will bear if he wants paper. It is up to the purchasing agent to try to control this inflationary trend."

But he finds the boxboard supply is *beginning* to catch up with demand. Undoubtedly, there will be a lot of people who disagree with this view, but certainly the manufacturers of boxboard are beginning to accumulate supplies of wastepaper and, while the pulp situation is still very bad, boxboard is being turned out in tremendous quantities.

True, the quality is still very much below prewar and, true, there are lots of instances where buyers are still unable to give their plants the amount of boxboard actually required, but there has been some improvement. Maybe this is true to a greater extent in the East. The demand for boxboard is still very strong, and it will be a long time before a buyer can get sufficient supplies to warrant saying the shortage of boxboard is over.

A slight recession in business would easily cause an equalization of the supply and demand factors in boxboard. The price situation seems to be under control, and perhaps 1947 may prove to be a happier year than 1946 as far as boxboard buyers are concerned.

Oneida Paper Opening Plant

CLIFTON, N. J.—Oneida Paper Products, Inc., opened a new plant on Tuesday. Combined with producing units in Los Angeles, Fort Worth and Baltimore, the new plant, brings Oneida into the ranks of the largest producers of specialty paper bags and packaging materials in the country.

OBITUARY

Henry Sanford Miller

WESTFIELD, Mass.—Henry Sanford Miller, president of the Miller Paper Box Company and former treasurer and general manager of the Bryant Box Company of Westfield, died last Saturday morning in the Noble Hospital, Westfield, at the age of 82. Mr. Miller had been inactive during the past few years due to illness.

A native of Westfield, he was born May 13, 1864, and received his education in the Westfield schools. In 1884, he went to Colorado where he was engaged in the cattle business for a time, later going into the real estate and fire insurance business in that state.

Returning to Westfield in 1896, Mr. Miller joined the Bryant Box Company where he remained for the following 40 years. He was treasurer and general manager of this concern, when he resigned in 1936. On Oct. 13, 1936, Mr. Miller with his son, Sanford, organized the Miller Box Company, which is located at 532 Main street, Holyoke. He became president of the new firm and his son treasurer and general manager.

Mr. Miller was a director of the Westfield Co-operative Bank, a member of Mount Mariah Lodge of Masons and belonged to the Order of Eastern Star.

His survivors are his widow, the former Gertrude E. Granger; two sons, Clarence of Stratford, Conn., and Sanford of Westfield and two grandchildren. A daughter, Mrs. Irene F. Dominy of South Weymouth, died last summer.

William W. Nearing

BRUNSWICK, Me. — William W. Nearing, retired paper manufacturer and banker, died late last month at the home of his daughter, Mrs. Whitney Coombs, after a long illness. His age was 82. For many years he was general manager of the Pejepscot Paper Company, and since 1904 had served as director of the First National Bank.

Born in Brooklyn, N. Y., the son of Woodbridge and Elizabeth B. Nearing, he attended Brooklyn schools, and came to Brunswick in 1889. That year he married Lillian Conkey who died in 1938. Mr. Nearing retired from his position with the Pejepscot Paper Company in 1923, but retained his directorship with the First National Bank.

He leaves another daughter, Mrs. Ruth M. Rise of Brunswick, and a granddaughter, Miss Dorothy Coombs.

William E. Brown

WOONSOCKET, R. I. — William E. (Bill) Brown, sales manager of the mechanical rubber division of the American Wringer Company Incorporated, died suddenly on December 26, 1946. Bill started to work for the American Wringer Company in 1902 as an office boy in their New York branch.

Where Roll-making EXPERIENCE

Pays Off In PAPER

The knowledge and skill accumulated during nearly a century of roll-making enables Farrel to give every calender roll a clear, hard, chilled surface, *with the skin of sufficient depth to provide maximum wear but not so deep as to detract from the strength of the roll.*

This chilled skin varies in depth from ⅝" in small sizes to 2" in large diameter rolls. It provides an extremely hard, wear-resistant surface capable of taking and holding a smooth, mirror-like finish. The roll strength lies in the gray iron structure below the chill.

In America's largest specialty roll shop at Ansonia, Farrel has the specialized skill and equipment to produce rolls from 5" to 72" in diameter and up to 312" face, ground round and straight to close tolerances, or crowned with the correct shape for specific purposes and operating conditions.

When you need rolls, remember that Farrel rolls assure maximum operating performance and service life. Information and engineering assistance on rolls and other equipment listed here will be supplied without obligation. 78-339

FARREL PAPER MILL MACHINERY

ROLLS: Chilled Iron, Dry Sand, Meehanite, Alloy Iron, Steel, Chromium Plated
FOR: Calender Stacks
Board Calenders
Super Calenders
Glassine Calenders
Friction Rolls
Breaker Rolls
Smoothing Rolls
Coating Rolls
Creping Rolls
Plater Rolls
Cutting Rolls
Paraffining and Waxing Rolls
Saturating Rolls
Silicating Rolls
Miscellaneous Special Purposes
CALENDERS: Paper and Board
GRINDING MACHINES: Roll
CALIPERS: Roll
GEARS, CUT: Spur, Single and Double Helical (Farrel-Sykes Continuous Tooth Type)
SPEED REDUCING GEAR UNITS
SPEED INCREASING GEAR UNITS
FLEXIBLE COUPLINGS

FARREL-BIRMINGHAM COMPANY, INC.
ANSONIA, CONNECTICUT
Plants: Ansonia, Derby and Stonington, Conn., Buffalo, N. Y.
Sales Offices: Ansonia, Buffalo, New York, Pittsburgh, Akron, Chicago, Los Angeles, Tulsa, Houston, Charlotte.

Farrel-Birmingham

Providence Paper Names C. J. Brown

PROVIDENCE, R. I. — Charles J. Brown has been appointed as sales executive of Providence Paper Company. Wellknown in Providence where he participated in athletics at Brown University, he is a graduate of the University of Maine Paper School and later served apprenticeship in the Parker-Young and Fitchburg Paper Co. mills.

In 1927 he became associated with John Carter & Company, Boston, and for the past seventeen years has been affiliated with the sales of the J. P. Lewis Company and of late with Lewis-Brownville Sales, Inc., covering the greater part of the Atlantic Coast Line representing the mills of J. P. Lewis and Brownville Board Company.

The Providence Paper Co., founded in 1875, is one of the oldest of New England Paper merchant houses. Originally a course paper house, they now operate two large office supply and stationary stores and are well established as fine paper merchants with a sales force of sixteen men, nine of whom are devoting their entire time to calling on the industrial and printing plants in that area.

Since the return of B. J. Hogue, president of the company, from the U. S. Air Corps where he served as captain, that company's Fine Paper department has shown a substantial increase under his guidance and the sales personnel now totals 167 years of fine paper experience.

Manager of this department is Leonard R. Dix who started in the paper business in 1908. Assisting him now is Ryder Gay, formerly head of the Providence office for Arnold Roberts Company who has been selling paper since 1915.

James L. Woodward, previously with John Carter & Company, Boston, and a good salesman in his own right has now returned from the armed forces and will devote his time to fine paper.

Wilbur Marsland recently returned from service with the army in the China - Burma - India theatre has also taken over the fine paper field.

Along with Albert Andrews, another returned veteran, are Elmer Ferguson, Marty Brennan and Ray Ferguson, all veterans of the armed services who are anxious to prove themselves after a training period under the officers of the company.

CHARLES J. BROWN

Andrews Joins Marathon As Internal Auditor

MENASHA, Wis. — Appointment of R. H. Andrews as internal auditor and procedures supervisor of the accounting division of Marathon Corporation was made known January 10 by H. G. Siepert, accounting director of the company. He will have his headquarters at the Menasha office.

A graduate of Rice Institute at Houston, Tex.; Mr. Andrews is a certified public accountant in Texas and California. He was recently released from the Army as a lieutenant colonel with more than five years of active service. He was awarded both the Legion of Merit and Army Commendation ribbons.

Providence Paper Company's sales staff meets

Saxe Tells Problems Of Quaker Trade

PHILADELPHIA—With an attendance of more than two hundred and seventy-five guests, one hundred and fifty of whom were paper mill executives from distant parts, the Paper Trade Association of Philadelphia held its forty-third annual reception and dinner at the Warwick on Thursday last. J. K. Javits, Counsel for the National Paper Trade Association, was the principal speaker. Mr. Javits, who is Congressman-elect from New York, stressed the value of his association with the paper industry in connection with his forthcoming congressional duties.

Nathaniel Saxe, retiring president of the association, in his report said: "I assumed office in January, 1946, five months after V-J Day, in what was termed a period of reconversion. There were many trials and tribulations. OPA was in effect for most of the year, and, without exception, we in the association, followed the dictates of that agency. Labor was in a state of unrest. In spite of all this, our association membership increased by six new members.

"On receipt of the news that several mills had changed their cash discount policy, we held an emergency meeting and protested vigorously. It is unfair and a hardship to us and we so informed the mills. This had its effect."

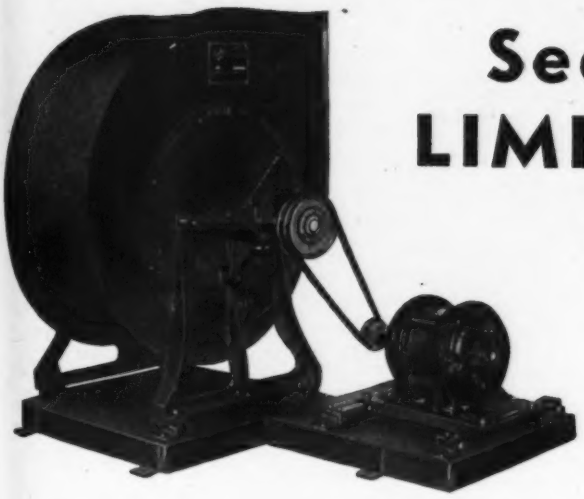
Continuing, Mr. Saxe said: "Nor have we forgotten our civic duties. In charities we have an enviable record. In the Community Chest Drive, for example, our members contributed ten per cent over the total of last year. And when you consider that we now give five times as much as we did, we can be justly proud of our record.

"Again we are happy to be able to give our annual meeting and dinner party at The Warwick and invite our good friends as guests. The support of your Board of Governors was wonderful and each did his share.

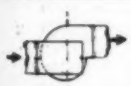
"While it is with a feeling of relief that the writer relinquishes his job, it is also with a feeling of satisfaction that both our association-member relationship and association-mill relationship have been so satisfactory in this turbulent time.

Officers elected for a one-year term are: Ross W. Fishburn, Whiting-Patterson Company, president; Frederic S. Balch, vice-president in charge of fine paper; Frank A. O'Neill, Jr., vice-president in charge of wrapping paper; Henry L. Adler, treasurer. C. Webster Mather was re-elected secretary. Edward L. Wallace is executive secretary. Mr. Balch is also first vice-president of Printing Industries of Philadelphia, Inc. Mr. Luff is a vice-president of the National Paper Trade Association. Four new members elected to the Board of Governors are: Henry L. Adler, Huff Paper Co.; Frederic S. Balch, Schuylkill Paper Co.; Ralph G. Luff, D. L. Ward Co.; Frank A. O'Neill, Jr., Paper Manufacturers Co.

Cut "ELBOW LOSSES" IN YOUR AIR DELIVERY!



See How "Buffalo" LIMIT-LOAD FANS PERFORM WITH DIFFICULT CONNECTIONS

Obstruction		Percent Reduction in Capacity		
		Static Pressure	Buffalo Type "LL"	Competitive Forward Curve
	Elbow on fan outlet	1"	3%	7%
		¾"	3%	7%
		½"	3½%	11%
	Elbow on inlet from left side	1"	2½%	8½%
		¾"	2%	11%
		½"	3%	17½%
	Elbow on inlet from right side	1"	1½%	5%
		¾"	1½%	6%
		½"	2½%	7%
	Elbow on inlet from top	1"	2½%	5%
		¾"	2%	6%
		½"	3%	7%
	Elbow on inlet from bottom	1"	1½%	5%
		¾"	1½%	6%
		½"	2½%	7%

Note—Data is based on a fan outlet velocity of 1600 feet per minute.

Often, when space considerations call for installing a fan with elbow connections either on inlet or outlet, static pressures go up! You're paying for more power and less delivery.

However, you can cut these pressure losses to a very substantial degree with Buffalo Limit-Load Fans in such spots.

The table at left shows, by actual pitot tube readings at 1600 cfm outlet velocity, the way these Buffalo Fans can step up the efficiency in your air system.

Why not let Buffalo Limit-Load fans save you money? Simply write us for Bulletin 3339, which gives you all ratings, capacities and construction data on these quiet, trouble-free fans.

BUFFALO FORGE COMPANY
159 Mortimer St. Buffalo, N. Y.
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

"Buffalo" Limit-Load FANS

Kimberly-Clark Hits High Mark At Kapukasing Mill

NEENAH, Wis. — Crepe wadding equivalent to forty million boxes of Kleenex was produced during the first full calendar year by Kimberly-Clark Corporation's Kapukasing, Canada, mill. W. F. Cook, mill manager, said there has been a record of no lost-time accidents so far since February 1, in a contest which will end officially January 31, 1947.

Another new Kimberly-Clark plant is now open for operation in its new location at Memphis, Tenn., with Charles Eubank, formerly of the industrial relations office at the main office here, as manager. Other former employes at Neenah who are now at Memphis are John Peterson, Badger-Globe, who is now mill engineer; George Swan, Lakeview, now mill planner; and Howard Neubauer, who has been in Memphis for about eight months; Helen Reimer and Viny Frederich, Lakeview, who are setting the Belt department at the Memphis plant.

The Memphis mill recently received two awards — a certificate of merit from the city beautiful commission of Memphis, and a certificate of achievement from the National Safety Council. The plant has reduced its accident frequency from 22.06 to 11.18 for comparative periods and had but two lost-time accidents since January 1, 1946.

An entire community is emerging from the wilderness of northwestern Ontario, where Kimberly-Clark is building its LonLac plant. Recently, the official opening of the recreation hall was held. At present it is being used for meetings, movies two evenings a week, and for Protestant and Roman Catholic church services.

Wilbur Hayes Joins Chas. T. Main Staff

BOSTON — Chas. T. Main, Inc., has added Wilbur Hayes to its engineering staff. Mr. Hayes had been plant engineer for the Minnesota and Ontario Paper Company at International Falls, Minn., since 1944. Previous to this he was plant engineer at the Rhinelander Paper Company, Rhinelander, Wis., from 1933 to 1944 and was in charge of the chemical laboratories at Appleton and Stevens Point, Wis., from 1927 to 1933 for the Consolidated Water Power and Paper Company. He is a graduate of the University of California and a member of TAPPI.

Hooker Sets Up Retirement Program

ROCHESTER, N. Y. — The Hooker Electrochemical Company has inaugurated an employee's contributory retirement program, effective as of October 1, 1946. The program provides for retirement income for life based on both past and future service. The cost of benefits based on future service is defrayed by contributions of both the employees and the company, the company paying about four-fifths of the total cost. In addition the company will bear the entire cost of past service benefits to which long service employees would have contributed had the program been in effect since the company was founded 40 years ago.

The program is designed to provide benefits which together with Social Security benefits will approximate 50 percent of the average earnings for employees who retire at their normal retirement date after 25 or 30 years of service.

Salesmen Will Hear McConaughy Talk

NEW YORK—James L. McConaughy, governor of Connecticut, will be the speaker at the luncheon of the Salesmen's Association of the Pulp and Paper Industry which will be held in the Grand Ballroom of the Waldorf Astoria Hotel in New York City on Tuesday, February 25th. This news was reported by Alan Helffrich, St. Regis Paper Company, chairman of the program committee and eastern vice-president of the Salesmen's Association. The other members of the committee include Jack B. Cowie, general sales manager of Hollingsworth and Whitney Company, Ralph Watt, assistant vice-president of Kimberly-Clark Corporation, Harold Holden, sales manager of Oxford Paper Company, Thomas Hanna of Mississquoi Corporation, and John R. Diggs, sales manager of the Mosinee Paper Mills Company.

The luncheon will start promptly at 12:30 p.m. and the cost of tickets will be $6.

Farrel Gearflex Couplings Feature New Catalog

ANSONIA, Conn. — A new 46-page bulletin, No. 447, entitled "Farrel Gearflex Couplings," completely describes various types of couplings for use in industrial and marine service, manufactured by the Buffalo division of Farrel-Birmingham Company, Inc. The booklet, with the aid of many photographs, drawings and installation illustrations, gives a clear description of coupling functions, plus recommendations of the correct types for specific applications. Included also are complete engineering data with ratings, dimensions and weights.

As a builder of heavy machinery for a number of important industries and a leading manufacturer of speed increasing and speed reducing units for industrial and marine use, Farrel-Birmingham is thoroughly familiar with power transmission conditions which require protection against misalignment by means of flexible couplings. The types described have many years of engineering experience behind their development, and efficiency of design has been proven in thousands of installations.

Sheppard Envelope Awards Prizes for Long Service

WORCESTER, Mass. — Twenty-seven employes of Sheppard Envelope Company were presented service awards at a dinner of the concern's Mutual Benefit Association in Hotel Sheraton. One hundred and fifty attended. Ernest R. Anderson was presented a wrist watch and pin for completion of 25 years. Thomas B. Kykens was awarded a pin. He received a watch last year for 25 years' service. Miss N. Myra Glazier, president of the Sheppard Envelope Co., made the presentations.

Also honored were:

For ten years' service: Miss Marion A. Gilmore.

For five years' service: David E. Johnson, Mrs. Lealus A. Simpson, Ernest F. Bourget, William C. Boggs, Miss Alice K. Walsh, Miss May Cooney, Arthur P. Russell, William T. McCorn, Miss Elizabeth C. Philip.

For two years' service: Stephen Walinsky, Miss Christine Evangelista, Mrs. Elizabeth LaFlamme, Alex E. Casavant, Miss Eileen Foley, Donald Dufresne, Miss Edna LaPorte, Mrs. Roxie Kinosian, Mrs. Faith Hebert, Miss Ruth Howard, Miss Alexina St. Martin, Andrew C. Gibson, Fred Woodward, Miss Aldona Varaska, and Kenneth Simpson.

Entertainment was provided by C. Vernon Inett, Miss Agnes Gaines, Miss Mary Harvey, Miss Aldona Varaska, Mrs. Faith Hebert, Mrs. Jean Gilmore, and Miss Ann O. Coffey.

John M. Emco, president of the association, was in charge.

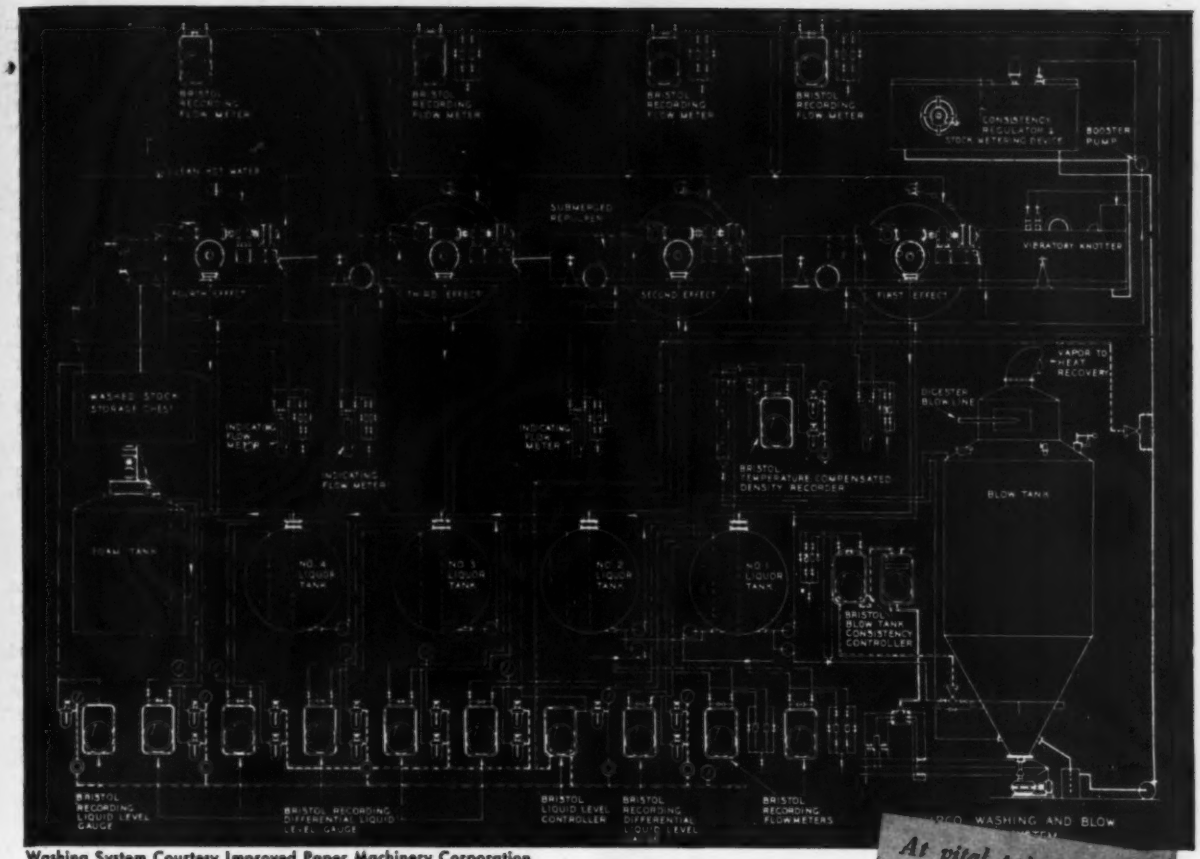
Mills Supplies Dealers Will Dine at the Commodore

NEW YORK—The annual banquet of the New York Association of Dealers in Paper Mills' Supplies, Inc., will be held in the Grand Ballroom of the Hotel Commodore on Tuesday evening, February 25. The committee in charge will be Walter H. Martens, chairman, John L. Neilsen and Arthur Rosenfeld.

In connection with the affair there will be a souvenir journal, and Alfred J. Moran will be in charge of the committee in charge of its publication.

Swenson Flow Diagrams Show Pulp Washing Systems

HARVEY, Ill.—The Swenson Evaporator Company, a division of Whiting Corporation, has published three new six-color flow diagrams illustrating the various systems of economical pulp washing. These prints show respectively, a three-drum five-stage pulp pulp washing system and a single-drum washing system, a two-drum four stage two-stage pulp washing system. Printed on heavy 16½" x 11" white paper, they are suitable for framing or for inclusion in reference notebooks.



Washing System Courtesy Improved Paper Machinery Corporation

At vital points, Bristol instruments record and control the flow through this modern system of stock washing.

HOW TO GET MAXIMUM RECOVERY OF "BLACK LIQUOR" WHEN WASHING KRAFT

In the processing of Kraft or Brown stock, complete removal of "black liquor" from the pulp fibres is of vital importance.

Thorough washing of the pulp with hot water is required to produce a pulp of acceptable color. Yet the amount of water must be kept to a minimum in order to keep the liquor strength up. The material balance of both liquid and pulp must, therefore, be maintained within close tolerances.

An effective solution to the problem is found in the accompanying diagrammed process. Note that Bristol equipment plays a major part in maintaining the necessary balances throughout this system.

Bristol Flow Meters enable positive regulation of the dilution factor. The saving in evaporation heat pays for their cost many times over. Bristol Liquid Level Gauges tell when the lowering of the level in a tank means that some part of the system is being starved, calling for adjustment. A Bristol Consistency Controller on the blow tank assures proper dilution and dispersion of the fibres, while other Bristol Instruments have important functions.

Here, in a single system, is striking evidence of Bristol's wide-ranging usefulness in modern process control. For further information, write for literature. Address THE BRISTOL COMPANY, 148 Bristol Road, Waterbury 91, Conn. (The Bristol Co. of Canada, Ltd., Toronto, Ont., Bristol's Instrument Company, Ltd., London, N.W. 10, England.) West Coast: Branch Factory — 40 Berry St., San Francisco 7, Calif., Branch Office — White Bldg., Seattle 1, Washington. Lake Region: *Branch Factory and Office* — 351 East Ohio St., Chicago 11, Ill., Southern States: *Branch Office*— Comer Building, Birmingham 3, Alabama.

Engineers process control for better products and profits

AUTOMATIC CONTROLLING AND RECORDING INSTRUMENTS

Australian Paper Mill Plans To Extend Its Markets

PERTH, West Australia—The chairman of directors of Australian Paper Manufacturers Ltd., (Sir Norman Brookes) states that extensions of the firm's activities in both New South Wales and Victoria are being planned. Additions to the plant at Broadford (Victoria) will allow a further 5,000 tons of paper board to be made each year, while the installation of another paper-making machine at Maryvale (Victoria) will mean extra turnover and the exployment of more hands. This company last year produced 151,000 tons of pulp, paper and board, compared with the 92,000 tons of the last pre-war year, and expects that within the next 12 months production will be stepped up another 30 percent.

A. P. M. now have large interest in Maddingley Brown Coal Ltd., and directors are looking forward to the time when they can be quite independent of coal from New South Wales—always a source of trouble owing to continued industrial disputes.

Thomas Owen & Co. Ltd., paper manufacturers of Cardiff, Great Britain, have taken over the gun-cotton factory at Alfredton, near Ballarat, Victoria, where they will establish a modern paper-making plant. It is stated that the company will invest some 1,000,000 pounds ($4,800,000 at par) in the new venture and employ some 2,500 people.

Among the firms recently registered in New South Wales were: Sydney Paper Co. Pty. Ltd., capital 2,000 pounds ($9,600) in one pound ($4.80) shares. Objects—to carry on the business of manufacturers and dealers in paper and cardboard. Subscribers, L. Fuller and K. Manning. Offices, Sydney; Deropa Pty. Ltd., capital $48,000 in $4.80 shares. Objects—to carry on the business of manufacturers and vendors of decorative and protective wrappings, box covers and linings. Subscribers. G. Doherty and I. Dyce. Offices, Sydney.

Stationer Reports Profits

W. Nevill & Co. Ltd., manufacturing stationers, report a net profit of $57,475 for the year ended June 30, 1946. This was a decided drop on the $65,746 of the previous 12 months. Dividend of 12 per cent is being maintained.

Whakatane Paper Mills, Auckland, New Zealand, report a net profit of $59,227 for the year ended June 30 last, an increase of $5,088 on the previous 12 months. Preference shareholders have reached a unanimous decision to submit a scheme of financial reorganization to ordinary shareholders at an early date. Directors report a serious electrical failure in the company's plant which adversely affected production over several months, and they state that the supply of essential raw materials continues to be extremely difficult.

During the war years an Auckland businessman gave up the whole of his net profit to the Government, and by the cessation of hostilities this gift had amounted to no less than $278,400. The donor wished to remain anonymous, but recently the Minister for Finance (Mr. Nash) stated that he was Mr. S. J. Robinson, managing director of B. J. Ball (New Zealand) Ltd., leading paper merchants.

It is revealed by the Commonwealth Statistician that during the month of June the overseas imports of newsprint in rolls and sheets totalled 14,203 tons, valued at $1,333,416. Compared with the corresponding month of 1945, there was an increase of 441 tons in sheets and 7,550 tons in rolls.

Imports of pulp, paper and stationery for the 6 months ended December, 1945, were valued at $14,985,600, of which the United States supplied $4,329,600.

Imports Reach 15 Million

Imports of newsprint for July (figures just released by the Commonwealth Statistician) are up on last month, rolls being 2,949 tons greater, and sheets 206 tons greater than for June. Imports from the United States during the month were: coated printing papers, 3 tons; lithographic, machine glazed or one-side calendered, 15 tons; and other printing papers, 131 tons.

At the recent annual meeting of Australian Newsprint Mills Pty. Ltd., the chairman (Sir Keith Murdoch) stated that production methods had greatly improved and that the output of the mills was now on a basis of 30,000 tons, which was in excess of the rated capacity of the paper machine. All Australian newspapers consuming 1,000 tons annually had now signed contracts to take up to 1956 the full output of the mill. The directors had decided to proceed immediately with the extension of the mills by installing a second machine and ancillary equipment. Total expenditure on buildings, plant and further railroads into the timber concessions was about $10,000,000, and production in about three years' time would be raised to over 70,000 tons yearly.

Manufacturers of stationery lines are still puzzled by certain aspects of the Sales Tax regulations. For instance, while betting tickets carry only 12½ per cent tax, Christmas and business cards come under the "luxury" definition with a sales tax of 25 per cent.

It is announced that among the subscribers to the Second Security Loan are: Australian Paper Manufacturers Ltd., $240,000; Australian Paper & Pulp Co. Ltd., $216,000; and Zig-Zag Paper (Australia) Pty. Ltd., $140,000.

Among the associations of the new firm, Fibreboard Containers Ltd., Adelaide, is Paper Products (Victoria) Pty. Ltd., a company with an issued capital of $120,000, of which $83,520 is owned by the Sydney branch. Also interested in the new venture is Corrugated Fibre Containers Pty., Ltd., Victoria, which has a capital of $240,000 held equally by J. Fielding & Co., Ltd., (box manufacturers) and Sands & McDougall Pty., Ltd. (paper merchants).

W. Nevill & Co., Ltd., manufacturing stationers, report a net profit of $57,475 for the year ended June 30, 1946, compared with the $65,746 of the previous 12 months. Dividend is being maintained at 12 per cent.

Urges Profit Sharing

Mr. W. A. Anderson, chairman of directors of Cumberland Paper Board Mills, Ltd., when speaking at the firm's recent annual general meeting, said that the only way to create peace in industry was by the introduction of profit sharing. "The profits which remain after the shareholders have received a reasonable return on their invested capital," he said, "should be divided on a fifty-fifty basis with the employees who will therefore become partners in the business, and as partners are not likely to be anxious to reduce working hours. Unless we adopt some incentive plan that will eliminate friction between labour and management, it looks as though we shall be going through turmoil and strikes indefinitely. The way to achieve a decent standard of living for all is not by increasing wages and reducing working hours but by a reduction of income tax which will leave more money in the weekly pay envelopes yet will not increase production costs." He reported that owing to the prevailing industrial unrest, the output of the operating company—Australian Paper Manufacturers Ltd.—dropped by 5,400 tons during the year.

Australian Paper Manufacturers Ltd., report that they are increasing their research facilities and the number of men engaged upon that work. It is stated that during the six war years to June 1945, the company paid no less than $5,217,600 by way of income tax on profits, together with several hundreds of thousands of dollars in Pay Roll, Sales and Land Taxes. The firm's mills in Victoria have been seriously affected by the impossibility of obtaining sufficient coal, and wood, sawdust and oil fuel has had to be substituted at increased cost and labor.

Mr. W. Shaw, foreign erector of Charles Walmsley's, Bury, Ltd., England, paper making machinery manufacturers, is at present visiting Tasmania in connection with plant ordered from his firm by Associated Paper Mills Ltd.

A HINT ON SIZING -

KELGIN FILLS THE BILL FOR THE MAN WHO PAYS THE BILL!

Kelgin is the economical answer to your surface sizing problems. Easy-to-use, it insures a perfect base for high gloss and ink brilliance.

Kelgin provides a uniform, smooth, dense surface—controls penetration of printing ink oils and waxes. It is completely adaptable to water box application in the calender stacks.

Kelgin will not produce foaming, picking or sticking to the rolls. It is equally soluble in hot or cold water.

Kelgin is a rigidly-processed product of nature. Free of impurities, it insures uniform, exact results. Our technical department will gladly discuss your surface sizing problems with you. Drop us a line today.

KELCO COMPANY

20 N. Wacker Drive, CHICAGO-6 | 31 Nassau Street, NEW YORK-5 | 530 W. Sixth Street, LOS ANGELES-14

Cable Address: KELCOALGIN—New York

Paper and Paper Stock Imports At New York and Other Ports

NEW YORK IMPORTS

WEEK ENDING JANUARY 11, 1947

SUMMARY

Newsprint	9461 rolls
Printing Paper	971 rolls
Wrapping Paper	7 bls., 556 rolls
Wallpaper	114 pcls.
Paperhangings	78 bls., 4-cs.
Tracing Cloth	11 cs.
Filter Paper	32 cs.
Drawing Paper	9 cs.
Photo-Paper	4 cs.
Glass Paper	1 cs.

NEWSPRINT

News Syndicate Co., Colabee, Baie Comeau, 5432 rolls.

Madden Reeve Angel & Co., Inc., Australia Victory, Helsingfors, 909 rolls.

Montmorency Paper Co., Rockliffe Park, Botwood, 3120 rolls.

PRINTING PAPER

Montmorency Paper Co., Rockliffe Park, Botwood, 971 rolls.

WRAPPING PAPER

Jay Madden Corp., Australia Victory, Helsingfors, 7 bls., 556 rolls.

WALLPAPER

S. K. Lonegren, Kanangoora, Gothenburg, 114 pcls.

PAPERHANGINGS

W. H. S. Lloud & Co., Fort Miami, London, 78 bls., 4 cs.

TRACING CLOTH

E. Dietzgen & Co., Lord Glentoran, Liverpool, 11 cs. (bleached cotton).

FILTER PAPER

H. Reeve Angel & Co., Inc., Fort Miami, London, 32 cs.

DRAWING PAPER

H. Reeve Angel & Co., Inc., Fort Miami, London, 9 cs.

PHOTO-PAPER

J. J. Gavin & Co., Fort Miami, London, 4 cs. (unsensitized).

GLASS PAPER

J. Stern, Fort Miami, London, 1 cs.

RAGS, BAGGINGS, ETC.

Castle & Overton, Inc., Alf. Lindeberg, Buenos Aires, 98 bls. rags.

American Cotton Products Co., Alf. Lindeberg, Recife, 54 bls. cotton waste.

Cecil Kutz, Alf. Lindeberg, Recife, 55 bls. cotton waste pickers.

Schimmel Trading Corp., Alf. Lindeberg, Recife, 168 bls. cotton waste.

State Street Trust Co., Medina, Vera Cruz, 7 bls. rags.

National City Bank, Pacific Victory, Alexandria, 43 bls. rags, 199 bls. old hessian rags.

Padawer & Co., Mount Mansfield, Bombay, 150 bls. cotton waste.

Brandwein Mazur Co., Mount Mansfield, Bombay, 300 bls. cotton waste.

Kauders Steuber Co., Mount Mansfield, Bombay, 200 bls. cotton waste.

Schimmel Trading Corp., Mount Mansfield, Bombay, 300 bls. cotton waste.

Lush Cotton Products Co., Empire Haig, Cochin, 300 bls. cotton waste.

Padawer Corp., Lambrook, Calcutta, 100 bls., cotton waste.

Castle & Overton, Inc., Stanley R. Fisher, Glasgow, 74 bls. cotton thread waste.

Tradesmans National Bank Trust Co., Stanley R. Fisher, Glasgow, 417 bls. old webbing.

E. J. Keller Co., Inc., Stanley R. Fisher, Glasgow, 45 bls. old webbing.

Cecil Kutz, Sheridan, Fortaleza, 58 bls. cotton picker waste.

American Cotton Products Co., Fort Panmure, Santos, 201 bls. cotton waste.

Schimmel Trading Corp., Fort Panmure, Santos, 62 bls. cotton waste pickers.

OLD ROPE

Hollingsworth & Vose Co., Stanley R. Fisher, Glasgow, 70 coils.

GLUESTOCK, ETC.

Chase National Bank, Alf. Lindeberg, Buenos Aires, 141 bls. dry gluestock.

John Gorvers, Cape Chalmers, Havana, 158 bls. dry splits; 54 bls. hide cuttings.

(———), Cape Chalmers, Havana, 142 bls. hide fleshings.

A. Schmoll Inc., Medina, Vera Cruz, 61 bdls. hide cuttings.

John Gorvers, Santa Clara, Barranquilla, 371 bdls. hide cuttings.

CASEIN

Tupman Thurlow Co., Fort Panmure, Buenos Aires, 5000 bags (ground lactic).

BOSTON IMPORTS

WEEK ENDING JANUARY 11, 1947

Tupman Thurlow Co., Fort Panmure, Santos, 508 bags bone glue.

PHILADELPHIA IMPORTS

WEEK ENDING JANUARY 11, 1947

Lush Cotton Products Co., Empire Haig, Calcutta, 99 bls. cotton waste.

Lush Cotton Products Co., Empire Haig, Cochin, 300 bls. cotton waste.

Glens Falls Union Again Elects Tracy

GLENS FALLS, N. Y.—Albert Tracy was elected president of Mohican Local, 155, International Brotherhood of Papermakers, for his fifth consecutive term at the annual meeting yesterday afternoon in the service building of Finch Pruyn and Company, Inc. The session was followed by a banquet at the Village Inn in South Glens Falls which was attended by 75 members and guests.

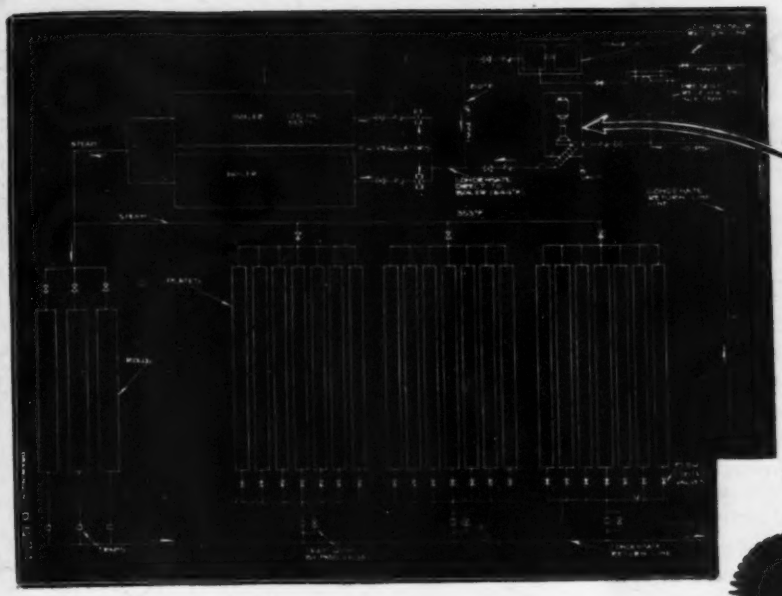
Others elected were: Vice president, Robert Hart, reelected; financial secretary, Glenn H. Wood; corresponding secretary, Edward DeMers.

Samuel Pruyn, vice president of Finch Pruyn and Company, Inc., presided as toastmaster at the banquet and introduced the following speakers: Mr. Tracy; William Gilday, assistant superintendent; George Gilbert, assistant superintendent; Louis J. Valley of the employment department; R. I. Wynne-Roberts, plant engineer; Arthur L. Mosher, paper mill superintendent; W. J. Wetherbee, assistant sales manager; R. D. Moynehan, beater room superintendent; H. F. Bullard, vice president; Lyman A. Beeman, vice president; Bernard Oddy, president of the Finch Pruyn Local of Pulp, Sulphite and Papermaker Workers; Frank Berry, of Albany, second international vice president of the International Brotherhood of Papermakers.

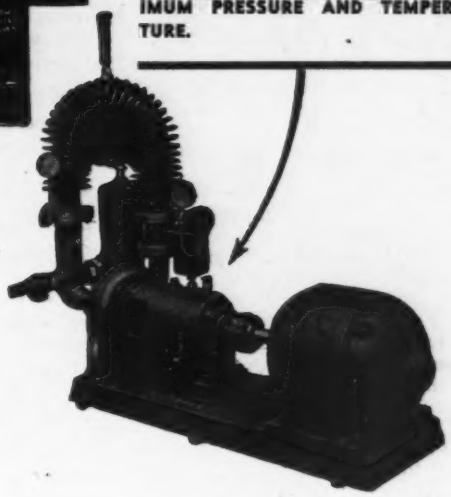
The dinner talks centered on Finch Pruyn's conversion program to groundwood specialty papers and some of the problems confronting the industry today. It was pointed out that despite the handicaps caused by slow deliveries of equipment and material excellent progress had been recorded during 1946. The Finch Pruyn woodcut in 1946 was greatly in excess of the last several years and should be ample for full operations in the next year or year and a half, according to an announcement. It was further stated that this wood is of a much higher quality than that which the company was forced to use during the war. The speakers also commented on the long and pleasant relationships which have existed between the management and union organizations and expressed their desire to continue the spirit of good will and maintain that attitude of good fellowship, of which last night's occasion was a fine example.

The toastmaster brought a message from Maurice Hoopes, president of Finch Pruyn, extending best wishes to the organization. Mr. Tracy expressed regret over the absence from the affair of Arthur P. Irving, who has been a guest and toastmaster for the Local on numerous occasions in the past. Among those present were many retired members of the organization.

The turkey dinner was served under the direction of Mr. and Mrs. Joseph Sweet, proprietors of the Inn.



THIS JET-LOOP PUMP, THE HEART OF THE C-B SYSTEM DRAWS THE HOT CONDENSATE AND ENTRAINED AIR FROM THE ROLLS AND COMBINING PLATES, ELIMINATES THE AIR BY PASSING THRU AIR SEPARATOR AND RETURNS CONDENSATE TO BOILER AT MAXIMUM PRESSURE AND TEMPERATURE.



MORE BOARD FEET PER MINUTE FROM EXISTING BOILER PLANT AND STEAM PRESSURE

Here is a way to increase the capacity of your corrugators and combiners without increasing your boiler plant. It has been proven time after time in paper plants all over the country.

A SIMPLE CHANGE

All it means is merely bypassing the traps and draining condensate to the Cochrane C-B High Pressure Condensate Return Pump which returns it to the boiler against boiler pressure.

More board feet per minute, more uniform high quality of product and fuel savings from 12% to 15%. Boiler pressures remain constant, make-up requirements are reduced.

HEATING EFFICIENCY

Drying, adhesion, hardness, speed, all depend on heating efficiency. Reduced drying time, uniformly hot plates, steady boiler pressure result from the C-B System, which insures prompt elimination of condensed steam, non-condensible gases and air from rolls and plates, and returns the condensate to the boilers at maximum pressure and temperature.

Write for Publication 3250

COCHRANE CORP., 3107 North 17th Street
Philadelphia 32, Pa.

COCHRANE C-B SYSTEM

CONDENSATE RETURNED TO BOILERS AT HIGH PRESSURE AND HIGH TEMPERATURE

Week's Record of Trends in The Pulp and Paper Market

Office of the PAPER TRADE JOURNAL,
Wednesday, January 15, 1947.

World production of paper and paperboard in 1946, it is estimated, approximated 32.5 million tons. According to the American Paper and Pulp Association, this compared with world production of 31,863,107 tons in the boom year of 1937. The significant fact is that major increases in production in the Western Hemisphere were offset by reductions of 50 percent in Europe and elsewhere. According to APPA's survey, the increase in production in the United States alone almost offset the decrease in Europe. The increase in Canadian production more than offset the rest of the European deficit. During the war 22.8 percent of the pre-war production of paper and paperboard shifted to the Western Hemisphere. The principal shift was away from Europe to North America. Mills of North America now make 77.1 percent of world production as against 55 percent in 1937. It would appear, according to the survey, reasonable to expect a steady improvement in European production.

Domestic output of paper and paperboard in 1947 will total approximately 20,550,000 tons, according to latest trade estimates, barring strikes, shortages of fuel, or raw materials. Production for 1946 was put at 19,200,000 tons. At present the industry's capacity is geared to meet the estimate for 1947, with new mills and plant expansions now coming into production. Production in October and November of 1946 was 1,000,000 tons over the industry's estimated capacity as of last January; which should indicate prospects for future capacity.

With paper and board supplies becoming progressively better most trade quarters seem to expect the next few months will bring supplies in balance with normal consumption, except for newsprint. Three factors seem to indicate that the normal supply and demand relationships will be attained by the end of the year. First, the industry is now geared to an annual capacity of more than 20,000,000 tons of all types of paper, compared with 1946 production of 19,200,000 tons and 1945 output of 17,370,000 tons. Second, Scandinavian imports should increase from less than 60 percent of the prewar average last year to 80 percent this year. Third, the demand for fine grade papers historically follows the non-durable goods market in direct proportion, meaning that an "easy" paper supply will result from a general leveling of business activity. Consumer requirements for the products of the pulp and paper industry are expected to continue throughout 1947 at approximately the same levels held throughout 1946. This expectation is based on the fact that consumer requirements rise and fall with the national level of economic activity. Even should a temporary and moderate recession from 1946 over-all economic level occur this year, it probably would have only a slight curtailing effect upon pulp and paper production.

The index of general business activity for the week ended January 4 rose to 148.0 from 144.1 in the previous week, compared with 133.3 for the corresponding week in 1946. The index of paperboard production rose to 199.0 from 187.0 in the previous week, compared with 103.9 for the corresponding week in 1946.

Paper production for January 4 was estimated at 96.3 percent, compared with 71.8 for the preceding week, with 89.1 for the corresponding week in 1946, with 81.0 for 1945, with 93.6 for 1944, and with 85.7 percent for the corresponding week in 1943.

Paperboard production for the week ended January 4 was 85.0 percent of capacity, compared with 66.0 percent for the preceding week, with 75.0 for the corresponding week in 1946, with 80.0 for 1945, with 86.0 for 1944, and with 82.0 percent for the corresponding week in 1943.

Wood Pulp

The new supply of wood pulp for all uses for 1947 is expected to be about 13,400,000 tons, compared with 12,430,000 tons in 1946. This represents an increase of 970,000 tons or around 8 percent greater than in 1946. Of this net increase, about 220,000 tons are expected to originate from northern European sources and the remaining 750,000 tons from domestic and Canadian production. Practicaly all of this additional supply, or about 84 percent of the total increase, amounting to 810,000 tons, is expected to be in paper grade pulp, which should be reflected in increased paper and board output. In the period January 4, 1946, through January 2, 1947, a total of 543,902 short tons of wood pulp was received from overseas. The value of these shipments was $37,165,645.

Old Rope and Bagging

Market for old rope continues steady. Manila remains strong at 5.75c per pound and sisal 4.75c with other quotations firm and unchanged.

Bagging market is showing more action with the mills completing their inventory check. Gunny remains $4.50 per 100 pounds to mills f.o.b. New York; light wool tares $4.75 and foreign gunny at $4.75 to $5.00.

Rags

Any market improvement during 1947 in the present tight supply of new cotton rags will probably have to await a definite and substantial upswing in the textile industry. Meanwhile, manufacturers of fine papers will have to continue the substitution of cotton to make up for the lack of new rags of cotton and linen. Some increases as to the prices of these rags in these categories may be expected during 1947.

Waste Paper

Department store collections which declined sharply after the Christmas shopping season have returned to normal. The market, meanwhile, remains firm with most grades quoted at prevailing top levels.

Nichols Engineering Assigns Responsibilities

NEW YORK — Nichols Engineering and Research Corporation has appointed F. B. Schilling, vice-president, to be vice-president in charge of sales and general manager; R. W. Rowen, vice-president, as vice-president in charge of engineering and research; S. Burgess as vice-president in charge of field operations. Harold E. Ingalls has been put in charge of sales of Nichols Freeman vortrap and bark burning equipment.

Dominion Envelope Adds Space

TORONTO — Dominion Envelope Co., Ltd., 130 Duchess Street, Toronto, Ont., is completing an addition to its downtown plant, which embraces a 2½-story, 70 x 160 feet, reinforced concrete flat-slab construction unit which, it is expected, will increase the output and add 25 more employes to the company payroll. The new unit is expected to be ready for occupancy early in February.

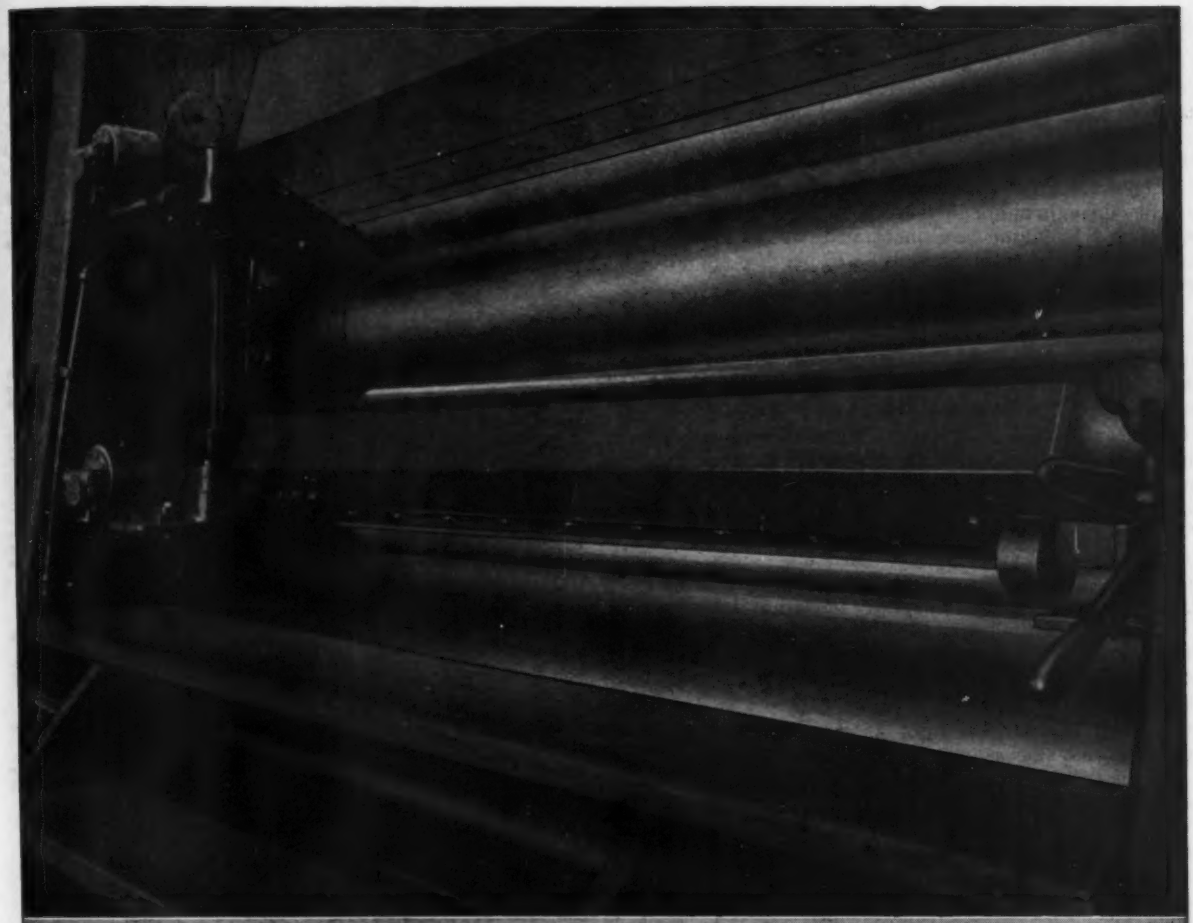
Canada's Pulpwood Market Doubles in Extent

MONTREAL—Wartime changes in the world supply of pulps have given Canadian pulp producers a choice of markets far wider than that existing before the war according to a study released by the Canadian Pulp and Paper Association.

While world exports of pulps have fallen to 4.4 million tons a year from a prewar average of 5.9 million, Canadian exports have risen to 1.4 million tons, double the pre-war level. Canada now supplies 65 per cent of total United States imports against 30 per cent during the 1930's.

"Although it appears likely that the needs of the United States market for pulp imports from Canada in 1947 will be no less than at present, Canadian producers are faced with insistent demands from 41 other countries whose wants are acute," the study declared.

It added that long-range market stability would be an important factor in the allocation of current supplies.



New machine buyers are specifying Lodding Doctors as original equipment

LODDING supercalender doctors for cotton, fibre and chilled iron rolls.

LODDING Doctors will improve your finish, and keep your rolls clean and glossy.

LODDING ENGINEERING CORPORATION

WORCESTER, MASSACHUSETTS, U. S. A.

Represented outside of New England by

W. E. GREENE CORPORATION

Woolworth Building NEW YORK

PULP and PAPER MILL ACCESSORIES, Ltd., 2023 Aylmer Street, MONTREAL, QUEBEC

MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, January 15, 1947.

BLANC FIXE—Demand reported active with raw materials still tight. Pulp is currently quoted at $40 per ton, in barrels, car lots, at works; the powder is currently quoted at $60 per ton car lots, f.o.b. works.

BLEACHING POWDER—Adequate supplies to meet current demands although there is some delay in current shipments. Quotations are unchanged. Prices on bleaching powder range from $2.50 to $3.10 per 100 pounds, in drums, car lots, at works.

CASEIN—Current prices on processed acid precipitated casein are reported around 46 to 52 cents per pound for both domestic and Argentine grades; f.o.b. shipping point, with quantity not specified at the present time. Supplies are expected to increase in the next few months.

CAUSTIC SODA—Market remains critical with supplies tightest ever. Shipments are behind schedule. Cutback production further reduces stocks. Solid caustic soda is reported at $2.50 per 100 pounds; flaked and ground offered at $2.90 to $3.00 per 100 pounds.

CHINA CLAY—Supplies becoming increasingly tighter as demand increases. Quotations remain unchanged. Domestic filler clay is currently quoted at from $8.50 to $9 per ton; coating clay is quoted at from $12 to $22 per ton, at mine. Imported clay is quoted at from $22 to $45 per long ton, export warehouse. All prices quoted in car lots.

CHLORINE—Market tight as demand continues to exceed output, stocks low. Lack of tank cars continues to hamper deliveries. Quotations unchanged. Chlorine is currently quoted at $2 to $2.25 per 100 pounds, in single unit tank cars, f.o.b. works.

ROSIN—Gum rosin in drums, per 100 pounds net, in yard New York, car lots, B, D, E, $8.35; F, G, H, I, K, M, N, WG, $8.55; WW, $8.65. Wood Rosin, per 100 pounds, l.c.l., f.o.b. N Y., B, $6.35; FF, $7.35; G, H, I, $8.35; WW, $8.55. Business is brisk, with more and more export licenses arriving from Washington.

SALT CAKE—Demand increasing with supplies showing little improvement. Prices remain unchanged. Domestic salt cake is quoted at $15 per ton in bulk. Chrome salt cake is quoted at $16 per ton. All prices in car lots f.o.b. shipping point.

SODA ASH — Demand active as supplies continue short, previous orders filled. Contract orders for 1947 heavy. Quotations continue unchanged. Current prices, car lots, per 100 pounds, are as follows: in bulk, $1.105; in paper bags, —$1.20; and in barrels, $1.60.

STARCH—Supplies are showing steady improvement. Previous orders filled. Starch prices remain unchanged. The pearl grade is quoted at $3.62 per 100 pounds; powdered starch at $3.73 per 100 pounds; both prices in bags, car lots f.o.b. Chicago.

SULPHATE OF ALUMINA—Demand active, supply fair. Quotations continue unchanged. The commercial grades are quoted at from $1.15 to $1.20 per 100 pounds, in bags, car lots, f.o.b. works. The iron free is currently quoted at $1.75 to $2 per 100 pounds, in bags, at works.

SULPHUR—Strong seasonal demand is reported with stocks plentiful to meet all requirements. Annual contracts are quoted at $16 per long ton, f.o.b. mines; the price f.o.b. at Gulf Ports is $20 per long ton. All prices in car lots.

TALC—Domestic and French grades are moving in fair volume with prices steady. Domestic grades are currently quoted at from $16 to $30 per ton at mines; Canadian at $35 to $45 per ton. All prices in car lots.

MARKET QUOTATIONS

With the elimination of price controls on paper, pulp, rags and other materials, the quotations given below once more become indicative of trends in an open market. At the moment they can be of little more, for, while some volume of business still is being done, under contract at the figures given below, fluctuations representing special conditions are too varied and too frequent to permit prices to be given as representing a wholly stabilized market.

Paper

(Delivered New York)

Standard News, per ton—

Roll, contract	$84.00	@	—
Sheets	103.00	"	—

Kraft—per cwt.—Carload Quantities
Zone A, Delivered

Superstandard Wrapping	*$5.75	@	$6.00
No. 1 Wrapping	*5.50	"	5.75
Standard Wrapping	*5.25	"	5.50
Standard bag	*5.25	"	5.50

* Prices for Standard Wrapping are for 40 lb. base weight; for Standard Bag for 30 lb. base weight.

Tissues—Per Ream 24x36 (480) 10 lb. Zone 1.

Wh. No. 1 Frd.	1.10	@	1.20
Wh. No. 1 M. G.	1.10	@	1.20
Wh. No. 1½	.95	@	1.10
Wh. No. 2	1.00	@	1.10
Wh. Anti-Tar.	2.25	@	3.50
Kraft Unbl.	1.15	@	1.25
Manila No. 2	.90	@	1.05

Toilet—Per Case of 100 rolls 1 M Sheets.

Unbleached	4.47	@	5.50
Bleached	6.50	"	—

Paper Towels — Per Case of 3750 Zone 1.

Wh. C. fold 11x13⅛	4.09	@	—
Br. Sgl. fold 10 in.	2.37	"	2.48
Br. M'tif'd 9⅛x14⅝	3.48	"	—
Br. M'tif'd 9⅛x9¼	2.37	"	2.48

Manila—per cwt.—C. l. f. a.

No. 1 Jute	11.25	@	—
No. 1 Manila 35 lb.	6.00	"	7.00

Boards, per ton—

News	*70.00	@	75.00
Chip	*67.50	"	73.00
Sgl. Mla. Li Chip	*80.00	"	89.00
White Pat. Coated	*86.00	"	101.50
Kraft Liners 42 lb.	*84.00	"	100.00
Binders Boards	94.00	"	126.00

Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5, regular 35-39 basis, add $5; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following are representative of distributers' resale prices, all deliveries in Zone 1:

Rag Content Bonds and Ledgers—

	White, Assorted Items Bonds	Ledgers
100% Rag Ext. No. 1	$39.75@$46.75	$40.90@$48.00
100% Rag.	32.85 " 38.50	34.00 " 40.00
85% Rag	.... "	30.55 " 38.75
75% Rag	24.30 " 28.50	24.45 " 30.00
65% Rag	.... "	.... " ....
50% Rag	30.05 " 24.50	21.25 " 25.75
25% Rag	17.85 " 21.75	19.00 " 23.25

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers..

	White, Assorted Items Bonds	Ledgers
No. 1	$12.00@$14.50	$13.15@$16.00
No. 2	11.25 " 13.75	12.25 " 15.00
No. 3	.... "	.... " ....
No. 4	10.60 " 13.00	11.75 " 14.25

Colors $1.00 cwt. extra.

Free Sheet Book Papers—

	White, Cased Paper	
No. 1 Glossy Coated..	$14.70@$16.75	
No. 2 Glossy Coated..	13.75 "	15.50
No. 3 Glossy Coated..	13.20 "	14.80
No. 4 Glossy Coated..	12.80 "	14.30
No. 1 Antique (Watermarked)	11.35 "	12.75
No. 2 Offset	10.65 "	12.25
A Grade E. F.	10.60 "	12.00
A Grade S. & S. C.	11.00 "	12.35
B Grade E. F.	10.30 "	11.75
B Grade S. C.	10.70 "	12.25
C Grade E. F.	10.00 "	11.35
C Grade S. C.	10.40 "	12.00
D Grade E. F.	9.70 "	11.00
D Grade S. & S. C.	10.50 "	11.50

Ivory & India at $.50 cwt. extra.

Wood Pulp

Domestic mill prices delivered with former OPA freight allowances.

	Per Short ADT		
Groundwood	$75.00	@	115.00
Unbleached Sulphite	105.00	"	—
Bleached Sulphite	115.00	"	—
Bleached Soda	105.00	"	115.00
Unbleached Kraft	102.50	"	—
Southern Kraft	90.00	"	—

Canadian mill prices delivered with freight allowances of $7.50 per ADT; unless otherwise specified:

	Per Short ADT		
Regular Kraft	$102.50@		—
Select Unbleached Kraft (no freight allowance)	105.00	"	—
Unbleached Sulphite	105.00	"	—
Glassine Unbleached Sulphate (no freight allowance)	90.00	"	—
Bleached Soda	105.00	"	115.00
Groundwood	75.00	"	80.00
Siderums Pulping News	75.00	"	—
Hardwood and Specialty Grades	Nominal		

Swedish wood pulp prices, per ton of 2,000 lbs. air dry weight on dock usual Atlantic and Gulf ports with an average freight cost of about $9.00 per short ton included. Subject to change as it is said these prices are not satisfactory to Swedish producers:

	Per Short ADT
Bleached Sulphite	$120.00
Bleached Kraft	126.00
Unbleached Sulphite	95.00
Unbleached Kraft	89.00

Finnish quotations f.o.b. shipping point

	Per Short ADT
Bleached Sulphite	$165.00
Unbleached Sulphite	132.50
Unbleached Sulphite (special grade)	137.50
Unbleached Sulphate	132.50
Unbleached Sulphate (special grade)	139.00

Other European countries, at the present time, are not quoting on prompt and forward deliveries of wood pulp, because they have no tonnage available for export.

New Domestic Cotton Cuttings

(Prices delivered Mill Plus Dealer's Commission)

Finnish quotations f.o.b. shipping point

White Shirt	$10.50
Light Silesias	7.50
Unbleached Muslin	11.00
White Back Blue Overalls	8.25
Blue Overalls	7.75
Unbl. Fancy Shirt	4.50
Light Percales	5.50
Light Prints	5.25
Washables	4.00
Bleachable Khaki	5.50
Unbleachable Khaki	5.00
Cottonades	4.50

ONE OF THE "BIG 7" ADVANTAGES

OF STAINLESS EQUIPMENT

When flow boxes in this paper mill were made of wood, clean-up crews washed and scrubbed for almost an hour. Even so, according to the superintendent, it was a half-done job. They were never "really clean."

Now, with flow boxes made of ARMCO Stainless Steel, cleaning is a 10-minute job. Only a hose and water under pressure are needed. Scrubbing is out. What's more, this rustless metal is clean and smooth after every wash.

This and the other advantages of ARMCO Stainless equipment give you lower operating costs and better paper. Costly slime-accumulations are greatly retarded by the smooth, hard surface of ARMCO Stainless. This means cleaner equipment, fewer weak spots and breaks in paper.

Ask your equipment fabricator about ARMCO Stainless Steel. Or write us direct. The American Rolling Mill Co., 4291 Curtis St., Middletown, O.

more scrap
means more steel

We urge you to collect every pound of iron and steel scrap, including unused and obsolete equipment. Speed it to the steel industry through your regular channels. Present high steel production cannot be maintained unless more scrap is shipped to the mills promptly. The situation is critical.

STAINLESS ARMCO STEEL

THE AMERICAN ROLLING MILL COMPANY

Special-Purpose Sheet Steels • Stainless Steel Sheets, Bars and Wire

Old Domestic Cotton Rags

(F.O.B. Shipping Point Plus Dealer's Commission)

	Per 100 lbs.
No. 1 Whites Repacked	$5.00
No. 1 Whites Miscellaneous	4.25
No. 2 Whites Repacked	4.00
No. 2 Whites Miscellaneous	3.50
Blue Overalls	3.75
Thirds and Blues Repacked	3.00
Thirds and Blues Miscellaneous	2.50
No. 1 Roofing Rags	1.85
No. 2 Roofing Rags	1.75
No. 3 Jute Bagging	1.65
No. 4 Brussels and hard back carpets	1.65
No. 5A Roofing Rags	1.65

New Foreign Cotton Cuttings

(Prices delivered Mill)

	Per 100 lbs.
New Dark Cuttings	$6.00 to ....
New Mixed Cuttings	6.50 " ....
Light Silesias	9.00 " 10.00
Light Flannelettes	8.00 " 9.00
New White Cuttings	13.00 " 15.00
Fancy Shirt Cuttings	9.00 " 10.00
Light Prints	8.00 " 10.00
Bleachable Khaki, No. 1	7.00 " 7.50
Unbl. Khaki, No. 1	6.25 " 6.75

Old Foreign Rags

(F.O.B. New York)

	Per 100 lbs.
No. 1 White Linens	$14.00 to 16.00
No. 2 White Linens	12.00 " 13.00
No. 3 White Linens	8.00 " 9.00
No. 4 White Linens	8.00 " 9.00
No. 1 White Cottons	10.00 " 12.00
No. 2 White Cottons	8.00 " 9.00
No. 3 White Cottons	6.50 " 7.00
No. 4 White Cottons	5.00 " 5.50
Extra Light Prints	7.50 " 8.00
No. 1 New Light Prints	6.25 " 6.75
Med. Light Prints	5.25 " 5.75
Dutch Blue Cottons	5.25 " 5.50
Checks and Blues	4.00 " 4.25
Linsey Garments	4.50 " 5.00
Dark Cottons	3.75 " 4.00
Old Shopperies	3.25 " 3.50
New Shopperies	3.25 " 3.50

BAGGING

(Prices to Mill, f.o.b. N. Y.)

	Per 100 lbs.
Foreign Gunny, No. 1	$4.75 to 5.00
Domestic Gunny, No. 1	4.25 " 4.50
Light Wool Tares	4.50 " 4.75
Heavy Wool Tares	4.75 " 5.00
Bright Bagging	4.25 " 4.50
Foreign Manila Rope	6.00 " 7.00
Domestic Manila Rope	5.75 " ....
Jute Strings	4.50 " 5.00
No. 1 Sisal Strings	4.00 " 4.50
Mixed Strings	1.75 " ....

Waste Paper

Prices to Mills

(Dollars Per Ton)

F.o.b. New York, Baled

No. 1 Hard White Envelope Cuts, one cut	$100.00 @ $110.00
No. 1 Hard White Envelope Cuts	85.00 " 100.00
No. 1 Hard White Shavings, unruled	100.00 " —
No. 1 Hard White Shavings, ruled	80.00 " 90.00
Soft White Shavings, one cut	85.00 " 90.00
No. 1 Soft White Shavings	75.00 " 80.00
Soft White Shavings, Misc.	65.00 " —
No. 1 Fly Leaf Shavings	40.00 " —
No. 2 Fly Leaf Shavings	(nominal)
No. 1 Groundwood Fly Leaf Shavings	30.00 " 33.00
No. 2 Mixed Groundwood Fly Leaf Shavings	(nominal)
Mixed Colored Shavings	(nominal)
Mixed Groundwood Colored Shavings	(nominal)
Overissue Magazines	(nominal)
No. 1 Heavy Books & Magazines	38.50 " —
Mixed Books	22.00 " 25.00
No. 1 White Ledger	50.00 " 52.00
No. 2 Mixed Ledger, colored	40.00 " 45.00
New Manila Envelope Cuttings, one cut	65.00 " 75.00
New Manila Envelope Cuttings	65.00 " 75.00
Extra Manilas	(nominal)
Mixed Kraft, Env. & Bag Cuttings	70.00 " —
Kraft Envelope Cuttings	80.00 " 85.00
Triple Sorted, No. 1 Brown Soft Kraft	55.00 " —
New 100% Kraft Corrugated Cuttings	55.00 " 60.00
No. 1 Assorted Old Kraft	40.00 " —
New Jute Corrugated Cuttings	27.00 " —
Old 100% Kraft Corrugated Containers	(nominal)
Box Board Cuttings	23.00 " —
White Blank News	45.00 " —
Overissue News	35.00 " —
No. 1 News	25.00 " 26.00
No. 1 Mixed Paper	19.00 " 21.00
Old Corrugated	28.00 " 30.00
Mill Wrappers	22.00 " 25.00

Twines

All Prices Nominal

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—	
India	.26 @ .29
Fine Polished—	
Fine India	.31 " .35
Unpolished—	
Paper Makers	.20 " .26
Tube Rope	.22 " .27¾
Wrapping	.26 " .33½
Cotton	.70 " —
(Hard Fiber)	
Mex. Sisal	.21 " .24
Manila	.33 " —
(Hemp)	
Polished Hemp	.63 " —

PHILADELPHIA

Domestic Rags (New)

(F.O.B. Eastern Shipping Point)

Shirt Cuttings—	
New White No. 1	.07¼
New White No. 2	.05¾
Light Silesias	.05¾
Black Silesias, soft	.03¾
New Unbleached	.07½
Washable Prints	.04¼
Washable No. 1	.03
Blue Overall	.05½
Cottons—Acording to grades—	
Washable Shredding	.01¾
Fancy Percales	.04¾
New Black Soft	.03¼
Khaki Cuttings—	
Unbleachable Cotton Cuttings	.03½
Bleachable Cotton Cuttings	.04¼
Men's Corduroy	.03½
Ladies' Corduroy	.03
Cottonades	.03¼

Domestic Rags (Old)

White No. 1—Repacked	3.80 to 4.00
Mixed White	3.50 " —
White No. 2—Repacked	2.90 " —
Thirds and Blues—Miscellaneous	1.80 " 2.50
Repacked	2.20 " —
Roofing Stock—	
Foreign No. 1	1.85 " —
Domestic No. 1	1.75 " —
Domestic No. 2	1.65 " —
Roofing Bagging	1.35 " —
Old Manila Rope	5.75 " —

Bagging

(F.O.B. Eastern Shipping Point)

Gunny No. 1—	
Foreign	Nominal
Domestic	3.00 to 3.50
No. 1 Clean Bright—Sisal Strings	.04 " —
No. 2 Clean Bright—Sisal Strings	.03 " —
Sisal Jute	.02½ " .02¾
Scrap—	
No. 1	3.25 " 3.50
No. 2	1.75 " 1.85
Wool Tares, heavy	4.00 " 4.25
No. 1 New Light Burlap	3.00 " 4.00
New Burlap Cuttings	3.75 " 4.00

Old Papers

(F. o. b Phila.)

Mill Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	$100.00 @ $115.00
No. 1 Hard White Shavings, unruled	100.00 " —
Soft White Shavings, one cut	90.00 " 95.00
White Blank News	45.00 " 50.00
Soft White Shavings, Misc.	65.00 " 70.00
No. 1 White Ledger	52.00 " 55.00
No. 2 Ledger, colored	42.00 " 45.00
No. 1 Heavy Books & Magazines	38.50 " 40.00
Overissue Magazines	nominal
New Manila Envelope Cuttings	65.00 " 75.00
No. 1 Assorted Old Kraft	40.00 " —
No. 1 Mixed Paper	19.00 " 21.00
Box Board Cuttings	23.00 " 25.00
Kraft Corrugated Cuttings	nominal
Old Corrugated	28.00 " 30.00
Overissue News	35.00 " —
No. 1 News	26.00 " 30.00

BOSTON

Old Papers

(F. o. b. Boston)

Mill Prices, Baled

No. 1 Hard White Shavings, unruled	5.00 @ 6.00
No. 1 Hard White Shavings, ruled	5.00 " 6.00
Soft White Shavings, Mis.	5.00 " 6.00
No. 1 Fly Leaf Shavings	1.67½ " —
No. 2 Fly Leaf Shavings	2.00 " —
No. 1 Groundwood Fly Leaf Shavings	1.25 " —
No. 2 Groundwood Fly Leaf Shavings	.90 " —
Mixed Colored Shavings	.75 " —
New Manila Envelope Cuts, one cut	2.87½ " —
Hard White Envelope Cuts, one cut	3.37½ " —
Triple Sorted No. 1 Brown Soft Kraft	2.50 " —
Mixed Kraft Env. & Bag Cuttings	2.75 " —
Kraft Envelope Cuttings	3.75 " —
No. 1 Heavy Books & Magazines	1.92½ " —
New Manila Envelope Cuts, one cut	2.87½ " —
New Manila Envelope Cuttings	2.65 " —
White and Colored Tabulating Cards	3.25 " —
Groundwood Tabulating Cards	1.35 " —
White Blank News	1.65 " —
No. 1 Assorted Old Kraft	— " 3.00
No. 1 Mixed Paper	— " .95
Overissue News	— " 1.25
Box Board Cuttings	.72½ " —
New Corrugated Cuttings, Kraft	2.25 " —
Old 100% Kraft Corrugated Containers	1.75 " —
Old Corrugated Containers	— " 1.40
Jute Corrugated Cuttings	1.07½ " —

Bagging

(F. o. b. Boston)

Gunny Bagging—	
Foreign	5.00 @ —
Domestic	5.25 " —
Sisal Rope No. 1	6.00 " —
Sisal Rope No. 2	5.50 " —
Mixed Rope	5.25 " —
Transmission Rope—	
Foreign	(nominal)
Domestic	3.50 " —
Manila Rope—	
Foreign	(nominal)
Domestic	5.75 " —
Soft Jute Rope	4.50 " 5.00
Jute Carpet Threads	6.00 " —
Bleachery Burlap	8.50 " 9.00
Scrap Burlap—	
Foreign	(nominal)
Domestic	3.00 " 3.25
South America	— " 3.25
Wool Tares—	
Foreign	4.50 " —
Domestic	4.50 " —
Aust. Wool Pouches	5.00 " 5.25
New Zealand Wool Pouches	5.25 " 5.50
New Burlap Cuttings	5.50 " 6.00
Heavy Baling Bagging	5.25 " 5.75
Paper Mill Bagging	3.50 " 3.75
No. 1 Roofing Bagging	1.75 " —

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—	
New Light Prints	.06 @ .06½
Fancy Percales	.04¼ " .05
New White No. 1	.06¾ " .07
New Light Flannelettes	.09½ " .10
Canton Flannels, Bleached	.06 " .06¼
Underwear Cutters, Bleached	.06¼ " .06¼
Underwear Cutters, Unbleached	.05¾ " .06
Silesias No. 1	.06 " .06¼
New Black Silesias	.03 " .03¾
Red Cotton Cuttings	.03½ " .04
Soft Unbleached	.11½ " .12
Blue Cheviots	.05½ " .04
Fancy	.02¾ " —
Washable	.02¾ " —
Khaki Cuttings	.02¾ " .03
O. D. Khaki	.06 " .06¼
Corduroy	.03¼ " .03½
New Canvas	.06¼ " .06½
B. V. D. Cuttings	.11½ " .12

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—	
Repacked	3.80 @ —
Miscellaneous	3.20 " —
White No. 2—	
Miscellaneous	2.65 " —
Twos and Blues, Repacked	2.20 " —
Old Blue Overalls	2.25 " 2.50
Thirds and Blues, Repacked	2.20 " —
Miscellaneous	1.80 " —
Black Stockings	3.50 " 4.00
Roofing Stock—	
No. 1	2.00 " —
No. 2	1.90 " 2.00
No. 3	1.35 " —
No. 4	1.35 " —
No. 5, Quality A.	1.35 " —
Quality B.	1.20 " —
Quality C.	.95 " —
Old Manila Rope	6.00 " —

Foreign Rags

(F. o. b. Boston)

Canvas	(nominal)
Dark Cottons	(nominal)
Dutch Blues	(nominal)
New Checks and Blues	(nominal)
Old Fustians	(nominal)
Old Linsey Garments	(nominal)
New Silesias	(nominal)

CHICAGO

Waste Paper

(F. o. b. Chicago)

Mill Prices, Baled

Shavings—	
No. 1 Hard White Envelope Cuts, one cut	$110.00 @ $120.00
No. 1 Hard White Shavings, unruled	105.00 " 115.00
No. 1 Soft White Shavings	80.00 " 95.00
No. 1 White Ledger	55.00 " 65.00
No. 1 Heavy Books & Magazines	40.00 " 43.00
White Blank News	43.00 " 49.00
Mixed Kraft Env. & Bag Cuttings	75.00 " 85.00
No. 1 Assorted Old Kraft	45.00 " 55.00
Overissue News	38.00 " 42.00
No. 1 News	30.00 " —
No. 1 Mixed Paper	19.00 " 20.00
Old Corrugated	35.00 " 36.00
Mill Wrappers	25.00 " 29.00

England Stresses Value Of Its Pulp Imports

LONDON—The need for increased supplies of wood pulp to be imported from Canada, Newfoundland, and the U. S. A. was stressed recently, at the annual report of the British Wood Pulp Association.

It was pointed out that while it was hoped Scandinavian supplies would increase it was felt that in future they would be far from adequate to meet the demands of the British market. The Association's views are of particular interest as wood pulp supplies are the key to the expansion of the newsprint industry in England.

"The past year has shown that there is still much reconstruction to be done before conditions in the wood pulp market can return to normal.

"Supply is still far from coping with demand and the United Kingdom is liable to be the worst sufferer in such a situation, since it is the countries which were her main sources of supply before the war that are now prevented by the inevitable shortages from regaining full production.

"Alterations of frontiers have cut off other sources of supply and it will clearly be long before there can be any renewal of the considerable pre-war imports from Central European countries.

"While therefore, it may be hoped that supplies from Sweden, Norway and Finland will increase it is felt that in future they will be far from adequate to meet the demands of the British market.

"In these circumstances the supplies that have continued to arrive from Canada, Newfoundland and the U.S.A. have been as invaluable as they were during the war. While deliveries from these sources show some diminution from the war-time peak, it is hoped, and indeed anticipated, that that is merely a temporary phase and that increased supplies will become available.

"The freeing from control of wood pulp purchasing for rayon and plastics may perhaps be taken as a welcome sign that a return to normal trading conditions will not be unnecessarily delayed."

Sir Keith W. Price, the retiring president, discussing the outlook for wood pulp supplies, said:

"When I addressed you last year it was within a few months of the cessation of hostilities so that we can now look back on the first twelve months of peace. At the time, I referred to the many problems that faced the paper trade, particularly in relation to supplies of wood pulp, and although the position has somewhat eased, we are I think you will agree, still far from reaching equilibrium.

"One of the primary factors that has not improved as rapidly as we would have hoped is coal. Our friends in Northern Europe are largely dependent on the importation of coal to keep their mills running and unfortunately, as we all know, supplies have not been forthcoming to the extent necessary to get back to anything like normal capacity.

"If one visits Scandinavia at present and sees the enormous quantities of wood being used as fuel for trains, steamers and industrial and domestic services, it is easy to appreciate how this is bound to affect pulp wood supplies.

"Other essential raw materials have also been available in very limited quantities. Production has therefore been at a low rate, but the real tragedy has been the large, in fact enormous, quantities of pulp wood that have had to be used for fuel. The time has now come when the forests of Northern Europe are unlikely to be able to support new pulp producing capacity unless the annual cut is in excess of annual growth.

"I would not wish to be numbered in the ranks of the pessimists. On the contrary, when one glances at the map of world forests it is obvious that there are ample supplies of raw materials for all the wood refining industries vastly to increase their output, and we are already beginning to see a start of this in Northern America where production will undoubtedly show a substantial advance in the course of the next few years."

Speaking on home matters, Sir Keith said the Association had welcomed the first step towards decontrol taken by the British Government in July by allowing specialty consumers of wood pulp to purchase their raw materials through the usual channels although subject to approval of import licenses.

"Let us hope that this step is the forerunner of others that will permit us to pursue our normal functions," he said. "I am sure I am voicing the sentiment of all when I say that we welcome this small measure of a return to private trading although we all recognize the really excellent work the Paper Control has done over a long and most difficult period.

"All those who have the interest of the paper trade at heart have been glad that during the past year manufacturing quotas have been somewhat increased and in particular we welcome larger newspapers and greater production in the newsprint mills which are still, unfortunately, running at a low percentage of their capacity.

"You will all have studied Sir Walter Layton's pamphlet on newsprint and will have felt, as I did, that an excellent report has been prepared which might well serve as a model for similar surveys of other aspects of the trade."

On the future, Sir Keith said: "I can safely say that whilst the world supplies of wood pulp will continue to mount, whether or not existing manufacturing units will be able to satisfy present day demands is a matter for conjecture.

"Based on a survey of the relative facts such as are available it would seem that saturation in paper consumption, even in the U.S.A., which leads the world in the per capita use of paper, has not yet been reached, and as in many respects the U.S.A. is a pattern for industrial development throughout the world, it is only logical to foresee a continued expansion in this and other countries for many years to come. That present available wood pulp capacity may not be sufficient cannot be denied, so that the opportunities that exist for pulp producers are unsurpassed.

"While there is some talk of slumps in various parts of the world, until the balance has been struck between civilian requirements pent up as the result of the war on the one hand, and normal consumption on the other, I suggest that it is difficult—if not impossible—to forecast the future. The one thing that seems certain is that for some years ahead many forest products including wood pulp are to be in relatively short supply."

Mr. Silvanus Nicol was installed as the new president and Sir Keith Price elected as the Association's representative on the council of the London Chamber of Commerce.

Crown Zellerbach Raises Carthage Mill Pay Rate

CARTHAGE, N. Y.—The Crown Zellerbach Corporation, National Paper Products Division, will add six per cent to the pay of an approximate 300 employe members of Local 118, International Brotherhood of Pulp, Sulphite and Paper Mill Workers and Local 93, International Brotherhood of Paper Makers. The pay boost was granted at a meeting of local union representatives and company officials, following an appeal for "more take-home pay" to meet the increased cost of living.

According to the agreement, it was not possible to change the present wage structure or other segments of the agreement at least until the termination date of the contract, July 1, 1947. The corporation, recognizing the problem facing some of its employes, took the voluntary action adding a voluntary supplement of six per cent to the gross pay of all employes covered by the labor agreement, Raymond J. Schadt, resident manager, said.

Forrest Joins Mead Staff

CHILLICOTHE, Ohio—K. A. Forrest, formerly with the Northwest Paper Company of Cloquet, Minn., has been appointed technical consultant with The Mead Corporation. He will be located in Chillicothe, at the head office of the operating organization.

Upson Gets Ready for Larger Production

LOCKPORT, N. Y.—"We are expanding our facilities and look forward in 1947 to greater output," President Charles A. Upson of the Upson Company said in an appraisal of new year prospects. "We realize, however, that many conditions may arise to affect the production picture.

"I believe it is safe to predict that the cost of finished goods will rise a little more before turning downward; that prices of food, clothing and some other lines will reach their peak in the first quarter of 1947 and then begin moving downward; that wholesale commodity prices will vary widely and may go up 10 percent before turning downward, and that durable goods have about reached their peak unless demands are made for still higher wages.

"As durable goods determine, to a large degree, the extent of our prosperity, there will be downward prices and cancellations when prices rise too high."

Dorr Promotes Ramsey And Hitch

NEW YORK—John V. N. Dorr, president of the Dorr Company, appointed Elmer R. Ramsey, formerly vice-president in charge of engineering, as operating vice-president; and J. Delano Hitch, Jr., formerly manager of the foreign sales division, as vice-president in charge of sales.

Donald Cupp Returns to Merritt-Chapman & Scott

NEW YORK—Donald E. Cupp, civil engineer, formerly with Merritt-Chapman & Scott Corporation, well known pulp and paper mill builders, has returned to that organization after three years in the Corps of Engineers, United States Army. He is widely experienced in the paper industry, having been with Merritt-Chapman & Scott during the construction of three units of the Union Bag and Paper Company at Savannah, and plants for the National Container Corporation, at Jacksonville, Container Corporation of America at Fernandina, Southland Pulp and Paper Mills, Inc., at Lufkin, Champion Pulp and Paper Company at Pasadena, Tex., and Bedford Pulp & Paper Company, Inc., at Big Island, Va.

Mr. Cupp returns to the company at a time when Merritt-Chapman & Scott is engaged in five large paper mill projects, for the Alabama Pulp and Paper Company, Hudson Pulp & Paper Corporation, Dexter Sulphite Pulp & Paper Company, B-F-D Company, Inc. and the St. Joe Paper Company and his experience will augment that of the well-seasoned and widely known staff of the Corporation.

Elwell-Parker Catalog Shows Models for 1947

CLEVELAND — Elwell-Parker Electric Co., builder of power industrial trucks and cranes, has issued a new catalog of basic models for 1947. Illustrated, with principal specifications, are 31 models including low-lift, with and without crane units; high-lift platform trucks; fork-type; cranes, stationary-bed load carriers and tractors. They are available with either electric or gas-electric power.

Illustrated also are fork-type trucks equipped with some of the modern interchangeable devices such as rotating roll-handlers and rams. High-lift platform trucks include die handlers which have capacities up to 50,000 pounds. The complete line provides engineered equipment for practically every materials-handling job within the field of industrial trucks and cranes.

Bristol Company Names Beane As General Sales Manager

WATERBURY, Conn. — H. E. Beane has been appointed general sales manager of the Bristol Company. Starting as a sales engineer, Mr. Beane has been associated with the company since 1920. From 1925 to 1935, he was district manager of various branch offices of the company. He became field sales manager in 1936, and sales manager in 1943.

HINE 18

Engineered by Specialists for Fast, Precision Winding

CAMACHINE 18 is largely used as the winding unit of paper machines and operates smoothly at speeds up to 2,000 F.P.M. in widths from 73" to 162"

In board mills and paper mills CAMACHINE 18 will give good service either directly behind the paper or board machine or as a rewinder in the finishing room When handling board it will run smoothly at speeds up to 1,200 F.P.M.

CAMACHINE 18 will keep ahead of the fastest paper or board machine. At whatever speed it may operate it produces perfect rolls with cleancut edges and uniform density from core to circumference. Among its features are automatic counterweighting of riding roller to insure uniform density throughout entire diameter, drum grooving to prevent wrinkles, easy threading, etc.

Simple in design and construction, CAMACHINES are noted for their dependability in daily operation year in and year out.

GET FACTS! WRITE FOR THIS FOLDER

CAMERON MACHINE COMPANY
61 POPLAR STREET, BROOKLYN 2, N. Y.
MIDWEST OFFICE: 111 W. MONROE ST., CHICAGO 3, ILL.

AND HERE ARE THREE CASE HISTORIES TO HELP YOUR INVESTIGATION:

Here are just three typical samples of the many reports we're ready to send you on Orr felts.

MICHIGAN MILL RUNNING BOARD: *"Bottom felt ran 3 weeks. Good for 4th week. Taken off to change two molds."*

EASTERN SULPHITE PULP MILL: *"The two treated felts produced better than 40% more pulp than regular felts."*

PROMINENT MILL ON TISSUE: *"One felt ran 5½ days, another 5 days, a third on 5 days and still in good shape."* Mill says average felt life only 2½ to 3½ days heretofore.

Therein you have a sample of the reports on file—hundreds of them—and they're available.

So much for wear. Now for some other points . . . the "put-on," the start-up, porosity, stretch, shrinkage, shower water, suction, etc. They're all covered time and time again in these reports.

Naturally you are interested in any felt that will do the job equally well or better and still save you important money. You are, therefore, urged not to discount these statements as just some exaggerated felt claims, but to investigate ORR-CHEM felts at once.

THE ORR FELT & BLANKET CO.
PIQUA, OHIO

ORR-CHEM

• Write Orr Felt Sales Department or call in Orr representative.

CHEMICALLY-PROCESSED
ORR FELTS

PAPER TRADE JOURNAL

Title Reg. U. S. Pat. Off.

W. L. Cook, Editor

Watching the Curves

Depending on the point of view, and on the interest with which the observer follows a set of trends in the market, any given combination of characteristics may be good or bad. From whatever point the performances of paper mill securities be observed, recent studies of their actions at least give the impression that the pulp and paper industry is emphatic in its reactions. To some observers the ability of paper securities to lead the upward movement is automatically a sign of the basic inherently broad nature of the product on which the earnings back of those securities are based. To others the abruptness with which these same stock prices may tumble to low points is a sign of the constant care which must be exercised by management to keep inventories high enough to be available but within such limits as will avoid too heavy a depreciation when demand slackens, or even threatens to fall off. Some there are who will watch the speed and extent of advance upward; others will point out, with some validity, that the paper mill must always watch and guard against a position in which it might find itself buried under its own pile of pulpwood.

Just at present the optimistic point of view had much to validate its reasoning. From the Dominion Bureau of Statistics study of price movements in the Canadian security field paper mill stocks are shown to be among the leaders in a recovery movement upward. Taking a composite of a hundred leading industrial stocks, and finding them at the beginning of the year at 6.7 per cent above their low prices of September 19, though still 15.5 per cent under their highs of last May, the Dominion statisticians discover the eight pulp and paper stocks that are included in the whole group are considerably above the average in their performance. High index for these stocks on May 30, 1946 was 287.9; the low mark was 211.7, and at the beginning of the year they had moved to 254.1. At the latter point, it is figured these eight stocks are up twenty per cent from their lows, which is some three times as good as the average for the whole list. Their present listing are but 11.7 per cent under their high of last Spring, again measurably better than is the record for the whole list.

Signs of Balance

The trade in general, and some considerable portion of other branches of the pulp and paper industry will join with the midwestern portion of the paper field in taking such comfort as it may from the dicta of writers for the financial press in Chicago. According to these sources, a fairly stable degree of balance between supply and demand may be expected to be achieved by the end of the year upon which we are now entering. Except for newsprint the market expert for the Journal of Commerce in Chicago has predicted that production will catch up with demand within the next few months.

Newsprint he places apart in a class by itself. Even promises of an enlarged production leave the market analyst without much cause for enthusiasm; and a considerable amount of foreign tonnage is seen as a requisite to any improvement in the relationship between supply and demand.

New freight rates are discovered a potential threat to all business activity, which may have some effect on the course of future paper requirements. Certainly they are to be looked on in the light of possible contributions to higher costs, and their effect on prices will be closely studied. That they will increase cost is certain; that they may force a price change is subject to further study of the market's ability to absorb higher figures. If they are not reflected in the price list their effect may be looked for in the profit margin.

All in all the market student is comforted with the assurance that the paper industry is now geared to produce more than 20 million tons. He expects also that Scandinavian imports during the present year will be increased by 25 per cent from less than 60 per cent of prewar average to something like 80 per cent of that figure. A third factor that is found to be distinctly encouraging from the trade's point of view—the producers are weighing its value too—lies in the record that demand for fine papers traditionally follows the market for non-durable goods, and that any leveling process in the general markets will result in a somewhat easier paper market too.

Future Sales Planning Now

It is never too soon to look forward to the future, and even now there are those who see a time approaching when intelligent effort will be needed to maintain the nation's industries on the enlarged scale of operations to which they have grown. James H. Rasmussen, vice-president of sales for United Wallpaper, Inc. is one of these, and even now is making his voice heard far and wide in the interests of better sales methods.

Speaking the other day before the New England Sales Management Conference at Boston he argued skillfully and forcefully for this point of view.

Rasmussen emphasized that future sales success depends not on a return to the patterns of the past but more on the development of new methods and approaches. He also pointed out that in organizing and guiding the necessary sales activities, the human

problems involved are among the most important of all. Declaring that salesmanship has played a major part in building present-day America, he added:

"Today, selling is a recognized and respected profession—a sought-after career. It has changed the lives of millions. It has raised the standards of living in America until we are the envy of the world. Actually, the salesmanship on which modern mass industry was built must be credited in great part for America's present position of world leadership."

Among the human problems facing sales management today and in the near future, according to Rasmussen, are: rehiring and recruiting to fill tomorrow's needed sales ranks; selecting the right types of men for different types of sales jobs; training of new men and retraining of older men to meet greatly changed selling conditions, and selling the salesman on the importance and dignity of his profession.

"We are apt to forget," he said, "that not only is much of the country's sales force new and much of the selling situation strange and different, but that our customers too have changed tremendously. This radically changed list of customers has the power to make terrific impact on business—because consumer income today stands more than twice as high as in the last pre-war year."

Since Pearl Harbor, Rasmussen explained, 12,500,000 new faces have appeared in the 20-35 age group, which he said is the most active group of customers for most businesses. He also pointed out that during the war years alone 6,000,000 new families came into existence in this country; 5,600,000 old customers were buried; 11,300,000 new customers were born, and more than 15,000,000 went into uniform and out of the market, to come back with new knowledge and new wants.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1946		Corresponding Weeks—1945	
November 30	103.0	December 1	97.5
December 7	106.6	December 8	99.0
December 14	106.7	December 15	99.0
December 21	102.7	December 22	96.5
December 28 (Revised)	71.8	December 29	60.8
January 4, '47	96.3	January 5, '46	89.1

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year Avg.
1946	94.7	98.4	104.4	102.7	100.7	104.6	94.0	104.7	101.3	106.4	105.5	*97.0*	101.1

COMPARATIVE YEARLY SUMMARIES

	1940	1941	1942	1943	1944	1945	1946
Year Average	85.6	97.4	90.4	87.8	88.1	89.7	101.1

PAPERBOARD OPERATING RATIOS†

Current Weeks—1946		Corresponding Weeks—1945	
November 30	94	December 1	96
December 7	99	December 8	97
December 14	102	December 15	98
December 21	102	December 22	92
December 28	66	December 29	52
January 4, '47	85	January 5, '46	75

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year Avg.
1946	90	97	100	99	94	97	89	99	96	100	99	92	96

* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.

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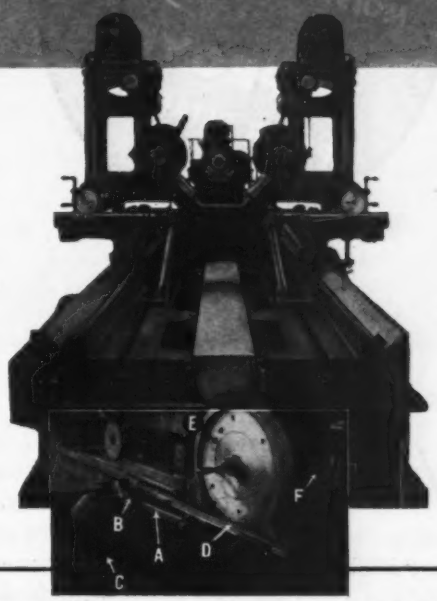

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Manufacture of Pulp and Paper and Related Products from Wood in Western Germany*

By J. N. Mc Govern[1] and G. K. Dickerman[2]

(Continued from January 9, 1947)

Groundwood Pulping and Brightening

For many years, nearly 50% of the total pulp production in Germany has been groundwood pulp. In normal years this amounted to approximately 1,200,000 tons annually. Of this production 10 to 15% was in steamed groundwood (braunschliff) from pine and used in board production. The steaming treatment takes place at 6 atmosphere pressures for approximately 1 hour. This darkens the wood considerably, but the fibers are long and flexible. The other 85 to 90% of the groundwood pulp was made in conventional ways for conventional outlets. Seven groundwood pulp mills were visited; none produced steamed groundwood pulp. Five of these were small plants (9 to 55 tons daily capacity) associated with specialty paper and paperboard mills. Two larger plants (approximately 100 tons daily capacity each) were associated with newsprint mills. Only a small segment of the groundwood pulp industry was, therefore, investigated and the manufacturing procedures outlined below may not be representative of the industry. Although there appeared to be considerable interest in recent years in improving the groundwood pulping process, the procedures and equipment were not believed to have changed during the last 8 or 10 years.

Groundwood for Newsprint. Spruce wood was preferred. Up to 10% beech has been used, but not satisfactorily. The Voith continuous grinder appeared to be preferred in the two mills visited, although one plant had several 4-pocket grinders in addition. The continuous grinders had grind stones 1.1 to 1.5 meters in diameter and a like range for stone width. In one instance an artificial stone made from cement was used because it was claimed the carborundum type was too expensive. The stones ran at 250 r.p.m. and the total pressure across the stone surface was approximately 1,800 kg. The dimension of the wood chambers were 1 × 1 × 5 meters in one case and 1.1 × 1 × 4 meters in the other. The grinding was done at 2 to 3% consistency and 60 to 70°C. One mill reported power consumption values of 1.07 kilowatt hours per 100 kg. of pulp and 125 kilowatts per 100 kg. of pulp; the other reported 100 to 115 kilowatts per 100 kg. of pulp with a production (per grinder) of 700 kg. per hour. The freeness values of the pulp, as given at the two mills, varied greatly. One mill reported 60° Schopper-Riegler after screening. The other reported a range of 75 to 78° Schopper-Riegler. At 75° the fibers were said to be large and coarse, whereas at 78° S.R. they were said to be long and flexible.

The grinding conditions for the 4-pocket grinders included running at 0.8 to 1% consistency and 70°C. with 4 to 4.5 atmospheres pressure on the pistons. Herkules (Dresden) artificial stones with a diamond pattern were used with next to the finest grit (designated A000). The stones in this case were 1 meter wide and had a diameter of 1.5 meters. Each grinder produced 525 kg. of pulp at 75 to 78° Schopper-Riegler per hour and the power consumption was 130 kilowatts per 100 kg. pulp. In neither mill was a fiber classification made.

A long fine fiber was produced in an old mill depending directly on river water head to operate two 3-pocket grinders at 28°C. and 0.8 to 1% consistency. When the head was low very little pressure could be applied.

Groundwood for Specialty Paper and Boards. In a mill producing groundwood—containing writing and manifold papers (Scheufelen) a small amount of groundwood pulp was made in three 4-pocket grinders with stones 1.5 meters in diameter and 0.5 meter wide, operated at 220 r.p.m. (Stones from Otto Schmidt, Dresden). The piston pressure was 5 to 6 atmospheres and the grinding was done at 0.5% consistency and 60 to 70°C. The power was 156 kilowatt hours per 100 kg. of pulp. This pulp when classified showed 8% retention on a 16-mesh (per cm.) screen and 65% passing through a 48-mesh screen. The stone was burred in a diamond pattern. In a mill producing fine groundwood pulp, artificial stones from Norway were used and the grinding was done at 1 to 1.5% consistency at 45 to 50°C. The pulp had a freeness range of 45 to 50° Schopper-Riegler and the power consumption was 121 to 132 kilowatt hours per 100 kg of pulp.

In still another mill producing groundwood pulp for part use in a sulphite board four grinders (one

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4-pocket and three 3-pocket) with Herkules stones 1.1 meters wide and 2 to 2.5 meters in diameter was used. The grinding was done at 2% consistency and 65 to 70°C. The power consumption was 110 to 120 kilowatts per 100 kg. of pulp.

Screening the Groundwood Pulp. The mills making groundwood pulp for newsprint took considerable care in screening the pulp from the grinder. The pulp from the grinder passed to a sliver screen, the accepted stock going to the primary screen and the coarse stock being recirculated to the grinder (latter believed to be poor practice by operator). Rotary and centrifugal primary screens were used. The rotary screens had 1.2 to 1.8 mm. holes and the centrifugal had 2.0 mm. holes. The centrifugals were preferred in one mill because a longer yet satisfactory fiber was obtained. The accepted stock from the primary screens passed to a thickener and the rejected stock passed to a secondary rotary screen with 0.9 to 1.1 mm. holes. The accepted stock again passed to the thickeners and the rejects passed to a stone disk refiner from whence the stock was recirculated to the secondary screen. This system was understood to be a typical old one. In the newer systems (not seen) the slivers and rejects from the secondary screen go to a hammer mill and the product therefrom is used for mill wrap and hard board.

In the small plants making pulp for use in low groundwood furnishes, the screening systems were simple. The pulp went to a knotter screen and then to rotaries with 1.5 to 2 mm. holes. In one instance, a flat slot screen was used after the sliver screen.

Groundwood Brightening. In two of the groundwood mills visited a part of the pulp was brightened with sodium bisulphite. In a typical installation, screen pulp at 3.5% consistency passed through a press roll combination made up of a top stone roll and a hard rubber lower roll. The pulp web from the thickener passed over the top of the stone roll where it met a felt wick for applying the bisulphite. The web then passed between the rolls and was lapped. The chemical consumption was 3 kg. of sodium bisulphite per 100 kg. of pulp. The temperature was 28 to 30°C.

Paper and Paperboard

The paper and paperboard industry in Germany manufactured generally high quality products according to procedures and with equipment conventional to the industry. The equipment on the whole was old and quality appeared to depend considerably on the skill and artisanship of the operators. Except possibly for the newsprint and kraft paper industries in Eastern Germany in Russian territory the German paper and paperboard industry was characterized by small production units operating at low rates of production. The relatively slow rate of operating the paper machines had a favorable influence, it is believed, on the quality of the paper and paperboard. The relatively low requirements in quantity for a wide number of paper grades has made the small, flexible unit fit the German economic practice better than the large and rapid production system successfully used for many paper grades in America. The marked absence of a general application of the newer developments in the German paper industry, particularly with respect to control and regulating machinery has been influenced no doubt by the severe curtailments in paper machinery manufacture since 1936. There was observed, however, a scattered use of up-to-date equipment; this use is discussed in the following paragraphs.

The pulping of waste paper and to some extent baled chemical and groundwood pulp was done in kollergangs or edge runners. In this respect the German industry was unique, although the Swedish industry is reported to use the practice somewhat. Continuous pulping in kollergangs was understood to be under development, but no equipment operating in this way was seen. The kollergangs had capacities varying from 300 to 500 kg. of pulp. Miscellaneous disintegraters for chemical pulp like Wiley mills and kneader-pulpers were also observed, but no breaker beaters.

The processing of the pulp was done in beaters, with jordans being used for cutting in only two mills inspected. Continuous processing of pulp was also understood to be done in Germany, but such equipment was not seen. The beaters were generally tile lined (only two with concrete and one with steel units) and had a capacity of 300 kg. pulp. In a few instances larger beaters, up to 700 kg. were used. Depending on the paper product, the beaters as a rule had stone rolls or steel knives (an occasional one had bronze knives). The stone roll beaters predominated. In one mill (Knoeckel, Schmidt) a beater built in 1942 by Wolfe & Sohn had been installed. The same mill also had a latest model Voith jordan with steel knives. This jordan operated on 500 volts, had a power consumption of 20 kilowatts per hour, and had a capacity of 8 tons per day. The beater setting in most of the mills was controlled by the power applied as measured by an ammeter. The beating time was controlled by freeness tests. The Schopper-Riegler tester was standard. It was doubtful, however, if Schopper-Riegler values are comparable between mills. It is also suspected that many mills conduct beating according to experience, rather than test. (A demonstration of the freeness test on pulp undergoing processing was requested at one mill. The freeness testing apparatus was found, however, to be covered with cobwebs and obviously had not been used for some time, even though the mill was in operation).

The screening ahead of the paper machine was generally done with rotaries. Centrifugals (mostly Erkansators) were in considerable favor, especially in the mills making fine paper. Rifflers were used only occasionally. Only one flat vibrating screen was observed.

The consistency and amount of stock flowing to the headbox of the paper machine was controlled both by hand and automatically. In several mills the consistency was controlled automatically by the amount of stock going to the machine chest and the amount going to the wire was controlled by hand valves. In these cases the weight of the paper was also controlled by the speed of the machine. A consistency regulator commonly used was a series of buckets revolving on a rotor in a mixing chest or in the machine chest which measured out the desired amount of pulp. The Voith consistency regulator was used in three mills visited and the Saell (Swedish) in another.

The flow boxes ahead of the paper machine wire were of several designs, one difference being in arrangement of baffles. The more modern machines were equipped with the Voith high pressure ("hochdruck") stock inlet. A recent version of this stock inlet for high speed machines employs a pump to supply the pulp suspension at a constant head at the

slice. The slice arrangements appeared to be conventional. In the mills making fine paper a triple slice seemed to be preferred.

The paper machines proper showed nothing new or novel. The usual wire and felt positioning regulators were used only on the more recently remodelled machines. Voith or other construction (one Millspaugh) suction couch rolls were used in about one-third of the mills inspected. Depending on the product no top couch rolls or felt jacketed top couch rolls were used. A hard rubber top couch was used in one case. The press part was usually made up of three or four sections consisting of stonite (occasionally natural stone) top rolls and hard rubber bottom rolls. No suction press rolls were observed in the paper or paperboard plants. A Vickery felt washer was observed in one mill and in two cases the first-press felt passed over a suction box. In older mills the felt was conditioned by passing through press rolls after being sprayed with water. In all but two or three mills the drives for the paper machine (and press and drier parts) had been modernized, although details were not obtained. The drier parts appeared to be conventional. Vacuum drying was not employed in the mills investigated. In one mill a complicated automatic drying controller designed by Dr. Otto Bonn (Berlin) was used. The latest machine seen was a Voith machine at Baienfurt built in 1938 and used in making a combination board.

The paper finishing operation and equipment in the mills inspected presented nothing unusual. Perhaps the most noteworthy thing was the large air-conditioned room housing the finishing operations at Scheufelen. The room was kept at 55 to 60% relative humidity and 20 to 22°C. by a Carrier system. Some 25 supercalenders, 10 cutters, 5 moisture machines, and other apparatus for finishing were installed in this room. While nothing new in the way of design was observed, several recently purchased (since 1942) cutters and combination cutters and slitters, and rewinders were observed. The supercalenders were operated at relatively low speeds, 350 meters per minute being the fastest noted.

All the mills had provisions for recovering fiber from the white water and other fiber-containing waste waters. In some cases settling tanks were used, in others rotary vacuum filters. Two Adka and two Sveen-Peterson systems were also observed.

Paper

Spin Paper. The need for a substitute for sisal for binder twine and woven bags led to the development of spin or twist paper ("spinn papier") for these purposes. The development was understood to have started in Sweden where a kraft paper was made that could be converted into binder twine and other twisted paper products having satisfactory use properties. (The twisted paper industry is, of course, of long standing in all countries, although the product has not had to meet the relatively rigid requirements of binder twine, for example). The shortage of kraft pulp and paper during the war necessitated the development of a spin paper from sulphite pulp. Considerable development work was done (see section on "Special Paper Products"), and a product was developed which was fairly satisfactory, although not up to kraft in quality. The size of the industry was such that in 1942 the monthly requirement of spin paper was 7,000 tons, made up of 6,600 tons of 40 grams (per square meter) paper, 350 tons of 30 grams and 50 tons of 24 grams paper. It was not ascertained for what particular purposes the lightweight papers were used.

The principal quality desired in a spin paper was a high tensile strength in the machine direction of the paper. This quality was obtained by using a hard (high chlorine demand) spruce unbleached pulp, by considerable beater processing, and by obtaining a high ratio of machine to cross directions of the paper during papermaking. In one mill the pulp had a Roschier number of 27 to 33; in another this value was 30 to 40. In another a "hard Mitscherlich" was used. It was reported that a pulp produced by indirect cooking with circulation could have a higher Roschier number (softer) than one cooked directly. The pulp was processed in beaters. Both stone rolls and steel knives were used and the beater operation depended considerably on the operators. The processing time varied from 1.25 to 3.5 hours, and sodium hydroxide was commonly used to accelerate hydration. The caustic consumption was as high as 5% on the pulp in one mill. Rosin was added in the amount of 1.5 to 2% of the paper toward the end of the processing and was precipitated with alum or sulphuric acid added to a pH value of 4.5. The processing was controlled by freeness tests, 40 to 50° Schopper-Riegler being the usual range. In no case was the use of wet-strengthening agents reported.

The processed pulp was run into paper on a conventional fourdrinier machine after passing through the customary rotary screens before the flow box. The shake on the wire was operated with a short motion and a minimum of total motion in order to give the desired directional strength. The paper machines were operated at 90 to 110 meters per minute for the light weight sheets and at approximately 200 meters for the heavy sheet (one mill 300 meters per minute). The finishing of the spin paper was according to usual practice, except in one instance supercalendering was reported to be effective. (A sample of high-quality Swedish kraft spin paper examined at a twisting mill appeared to have been supercalendered).

Spin paper was apparently made to specifications set up by an association *(11)*. During 1940 these specifications called for a minimum tensile strength in the machine direction of 8,000 meters, a strength value of 1.4% in the same direction, a moisture content of 7 to 8.5%, a water absorption between 45 and 65%, and a wet strength (ratio of breaking load wet to dry) of 15% minimum. The tests results obtained from most mills indicated the paper to have a tensile strength of 10,000 meters in the machine direction and 3,000 in the cross direction. Routine testing of a typical sheet in one mill gave the following results: weight, 39 grams per sq. meter; tensile strength, machine direction, 9060 meters; TS, cross, 3210 m., water absorption, 51.4%; wet strength, 18.7%. A bursting strength of 0.9 kg. per sq. cm. was obtained at another mill.

Crepe and Tissue Papers. For satisfactory use in the nitrating plant for military nitrates the sulphite pulps were required to be in the form of crepe paper. This paper had a weight of 35 grams per square meter uncreped and was creped on the paper machine to give 100% crepe. The pulp was beaten slightly to a Schopper-Riegler value of 30°, although one mill (Mannheim) was said to be beating to 60 to 65° Schopper-Riegler. At the beginning of the war 100% beech sulphite was used, but this did not work out satisfactorily and the pulp furnish was later changed

to 70% beech and 30% spruce nitrating pulps. Normal rayon grade pulps were used for this purpose. The paper hardness and degree of creping apparently gave more complaint than did the chemical characteristics.

Another war-time use of crepe papers was for bandages. This was absorbent tissue creped on the machine. A 100% bleached beech sulphite was used in one mill. The paper was sized normally (2%). In another mill an unbleached spruce sulphite pulp was used. This pulp was beaten in a stone roll beater to 47 to 48° Schopper-Riegler. The uncreped paper weight was 18.5 grams per square meter. As far as could be determined, wet-strength agents were not used for these absorbent papers.

A war-time substitute material was a creped sheet used as cleaning-rags around machinery, for insulating, and for clothing padding (for example shoulder pads). This product was made from 50% sulphite pulp and 50% groundwood pulp. The sulphite pulp was beaten 1.25 hours to 38° Schopper-Riegler before mixing with the groundwood at 50 to 60° Schopper-Riegler. The pulp was run into a sheet weighing 22 grams per square meter uncreped. The paper was run 120 meters per minute before the creping cylinder and came off the creping cylinder at 54 meters per minute. The crepe paper was stretched slightly on the winder, the rate here being 64 meters per minute.

Tissue papers for toilet, napkins, and other usual uses were made in several of mills inspected. At one plant a spruce sulphite pulp with Roschier number of 90 to 110 was used and the pulp was beaten 0.75 hours to a Schopper-Riegler value of from 25 to 30°. The weight of the finished sheet was 18 grams per square meter. In another mill tissue for carbon paper was made from 50% bleached and 50% unbleached sulphite pulp and beaten in a stone roll beater to 59 to 60° Schopper-Riegler. The finished sheet weighed 25 grams per square meter. A napkin tissue was made from 45% bleached Finnish sulphite pulp, 45% domestic sulphite pulp, and 10% tissue broke and beaten in a stone-roll beater to 35 to 36° Schopper-Riegler. Kaolin was added in the amount of 6%. The finished paper weighed 20.5 grams per square meter. In another mill, airmail tissue was made from 100% bleached sulphite pulp and beaten lightly for 8 to 10 hours to a beating degree of 70° Schopper-Riegler. The paper had an ash content of 3% and weighed 19 grams per square meter.

The papermaking details and papermaking equipment were ordinary for these papers. Yankee or similar drying systems were used. A pick-up felt arrangement was used in two mills.

Special Papers. Certain papers had a war-time or even military significance. The spin paper and certain of the crepe papers can be included in this category. Brief descriptions of several other papers in this class are given here.

An antigas carpet was made (Muenchen-Dachauer) from 70% imported soda (modified) pulp, 25% sulphite pulp, and 5% waste paper. The pulp was beaten for 3.5 hours at a consistency of 5.5% to a freeness of 38 to 40° Schopper-Riegler. The paper contained 2% rosin size and was semicreped with 5% stretch. The paper was sent to the Linoleum Werke (Bietigheim near Stuttgart) for further processing which was understood to include a heavy casein coating or saturating with paraffin.

An "antiradar" paper, a carbon filled sulphite paper was made in small quantities (Okriftel) for testing by the I.G. Farben company. These tests were under the supervision of Dr. Brennschede of the I.G. Farben company at Hoechst and were investigated by Capt. Anderegg of the U. S. Navy. A spruce sulphite pulp was used. It was beaten lightly for 2 hours and then a black paste supplied by I.G. Farben was added in the amounts of 60 to 150 kg. per 400 kg. of pulp. The paper was made conventionally on a fourdinier machine in weights varying from 50 to 130 grams per square meter. The paper trimmed 180 cm.

A high quality electrical condenser paper for use by Dielektra at Porz near Cologne was made at Schoeller and Hoesch (Gernsbach). The pulp preferred was a Finnish kraft pulp called "Kemi." It was an unbleached pulp that had been given an acid wash to reduce its ash content to 0.02%. Kraft pulp from Waldhof's Johannesmuehle mill had proven less satisfactory during the war. The water used by the mill came from a mountain stream and although not treated chemically, was free from chlorides and sulphates and had 1.0 degree of hardness. Approximately 250,000 gallons of water were used per ton of condenser paper. Processing of the pulp was done in stone roll beaters. The beating time was about 30 hours and the final freeness value was 90° Schopper-Riegler. Centrifugal screens were used ahead of the machine. The paper trimmed about 20 inches, calipered 0.0004 inch, and had a specific gravity of 1.2. The production per machine was about 1 ton per day.

Greaseproof and Glassine Papers. These grades of paper were made in a number of German papermills. Manufacturing procedures were obtained at one mill devoted entirely to these products (Knoeckel and Schmidt) and at four other mills making small quantities. It is understood that high quality papers in this field were long produced in Germany. The manufacture of greaseproof and glassine papers appeared to involve no new or different procedures or equipment as compared with the production of these papers elsewhere, but the skill of the beaterman and papermaker clearly played a particularly important part in attaining high quality in these grades. A hard spruce sulphite pulp produced under relatively mild cooking conditions (low temperature) so as to contain a high content of hemicellulose was agreed on as the most desirable pulp. The most desirable unbleached pulp had a cooking degree corresponding to a Roschier number of 40 or a Sieber number of 80. However, both unbleached and bleached pulps were used. The processing was generally done in stone roll beaters, although one mill also employed steel-knife beaters to a small extent. The screening of the pulp before the paper machine was done in three mills by Erkensator centrifugals followed by rotaries (0.45 to 0.6 mm. slots). The beating cycle was 2 to 4 hours with Schopper-Riegler values of 75 to 88°, the goal. The consistency during beating was 3 to 5%. Rosin size amounting to 1.5 to 3% was used. After beater processing the pulps were usually passed through a jordan. At one mill (Knoeckel, Schmidt) a Swedish stock regulator (Saell) was used.

The paper machine operation for producing these papers was conventional. The speeds were generally 100 to 130 meters per minute. The finishing of the glassine paper was also conventional on rather old supercalenders, after adding moisture (40% in one mill) on standard moisture machines. The supercalenders were 8 to 16 rolls high and had alternate steel and paper rolls. Special paper rolls made from "asbest" paper (50% asbestos and 50% paper pulp)

were used in one mill (Knoeckel, Schmidt). The asbest paper was made at the same mill. The total pressure was 30 to 40 atmospheres steam pressure. The supercalenders were usually operated at 50 to 130 meters a minute.

Glassine paper as produced in two mills had the following strength properties: Tensile strength in machine direction—8,000 to 10,000 meters; tensile strength across—2,500 to 3,500 meters; stretch in machine direction—1.2 to 2.0%; stretch across—1.2 to 3.0%; folding endurance in machine direction—500 to 1,000 folds; folds across—50 to 120. The weight of paper varied from 24 to 72 grams per square meter.

In no case was glycerine or other plasticizer used. The use of magnesium chloride was reported at one mill as a way to make the paper more flexible, but the hygroscopic nature of the salt made its use unsatisfactory.

Fine Papers (Writing, printing, copy, waxing, etc.). A number of fine papers are made at Schenfelen in Oberlenningen. This mill was probably the best of its kind in Germany. Although the processing and papermaking equipment were relatively old in original construction, a number of modern improvements had been made. The quality of the paper depended, however, a great deal on the operators. Other fine paper mills, while not so impressive as Schenfelen, appeared to make high quality papers by similar methods.

Newsprint Paper. The main part of the German newsprint industry is found in Eastern Germany in Russian territory; that portion in Western Germany included old, small mills making newsprint paper on old, relatively slow machines. It is understood that one of the Feldmuehle mills has at least one machine operating at 425 meters per minute in making a sheet trimming 600 cm. The following details are probably representative of a less important section of the newsprint industry.

In one newsprint paper mill (Feldmuehle-Reisholz) the groundwood pulp from the thickeners was pumped to a storage chest and then pumped to a stock chest through a Trimbey consistency regulator at 3%. The sulphite pulp was beaten for 1 to 2 hours in a beater with steel knives and bedplate to a Schopper-Riegler value of 20 to 22° and pumped to a storage chest. From the storage chest the sulphite pulp was pumped to second stock chest through another Trimbey at 3% consistency. The wet broke from the paper machine was disintegrated in a kneader-type pulper and pumped to a third stock chest through a third Trimbey consistency regulator set for 3% consistency. Proper proportions of pulps were then pumped to the machine chest. The pulp furnish was made up of 18% sulphite and 82% groundwood. The finished paper had a kaolin content of 7%. The pulp suspension was then pumped through rotary screens (0.7 mm. slots) to the Voith "high pressure" stock inlet and run over old machines with no unusual features. Suction boxes were not used. The main machine was run at 280 meters per minute, (350 meters maximum) and made daily 70 to 75 metric tons of 50 grams per square meter paper trimming 420 cm. The machine drive was more modern than the machine and was housed in a separate room.

In another mill (Kabel) groundwood and sulphite pulps in the proportions 80 and 20% respectively, plus the kaolin (10%) and dye (0.5%) were added continuously in a mixer hollander equipped with an auxiliary propeller-type stirrer which was said to give very effective and rapid mixing. The pulp from the hollander passed continuously to the machine chest. There were three machines in this mill. Two dated to 1900 and ran at 200 meters per minute and trimmed 260 cm. The third was built in 1927 and ran at 280 meters per minute and trimmed 390 cm. The machines were equipped with automatic screen and felt positioners and an Askania steam regulator for the driers. A Voith stock regulator was on order.

Sack and Packing Paper. These papers were manufaced on fourdrinier machines according to ordinary methods in a number of mills.

Paperboard Specialties. Ordinary manufacturing practices were used in Western Germany in making paperboard products, such as index, postcard and manila boards on fourdrinier machines, light weight carton board on combination fourdrinier and cylinder machines, and heavy carton board on cylinder machines. Only sulphite and sulphite groundwood boards of these types were made in the mills investigated. No mills making kraft board were seen.

In one mill making a high quality manila and index board the pulp furnish was 60% waste paper (20% groundwood and 80% chemical pulps), 20% sulphite pulp, and 20% groundwood pulp. This pulp was processed in beaters with iron knives and bedplate for 30 to 40 minutes at a consistency of 5 to 6% to a Schopper-Riegler freeness value of 50 to 60°. The pulp was then screened through flat screens with 5 to 6 mm. holes and then to rotary screens with slots 0.6 to 1.8 mm. wide. The pulp then flowed directly to either one of two very old fourdrinier machines that had been remodelled somewhat in the early 1930's but which had no headbox or slice. Board weight was controlled by the machine speed. The machine had a plain bottom couch roll and felt jacketed top couch roll. The press section was composed of three sets of stone-hard rubber rolls. The drier section was made up of 7 driers (1.5 meters in diameter). The board then passed over a large diameter (3.5 meters) drier to impart a machine glaze. The board finally passed through a four roll calender stock with 1,500 kg. total pressure applied. The machine was run at a speed of 100 meters per minute. A typical manila board made in this manner weighed 220 grams per square meter.

In another mill a groundwood carton board with bleached sulphite liners for cigarette and cheese cartons and the like was made on a combination fourdrinier and cylinder machine. The bleached sulphite pulp for the liners was processed to a freeness value of 25 to 30° Schopper-Riegler, whereas the groundwood and waste paper for the inners was processed to 40 to 50° Schopper-Riegler. The combination machine was made up of two fourdrinier machines for the liners and a five cylinder machine for the inners. One of the fourdriniers was a Voith machine made in 1938 and modern in every respect. The board passed through the press section composed of six sets of copper-rubber rolls (380 mm. diameter), one set of copper-steel rolls, and three sets of stonite-rubber rolls. The drier section was composed of 22 driers (1,500 mm. diameter). Two large driers (3,200 and 4,200 mm. diameter) were employed for imparting a glaze, and a short section was used for "after" drying. The board finally passed through a four-roll calender stack. The boards trimmed 300 cm. and were made in weights of 230 to 1,000 grams per square meter. It was claimed that the use of the liners made on the fourdrinier machines gave a high quality product. The output of the combination ma-

chine was 66 to 88 tons per day, depending on the weight of the board.

Carton board for food and drug packaging was made in another mill on a combination machine and on a cylinder machine. The normal pulp furnish was 50% sulphite pulp, 30% waste paper, and 20% groundwood pulp. The combination machine consisted of a fourdrinier section for one liner (sulphite) and directly above it a cylinder machine with five vats. This machine made boards 228 cm. in width and weighing 250 to 500 grams per square cm. at a speed of 50 to 60 meters per minute. The drier section was exceptionally large, being made up of 41 primary driers, 1 large glazing drier, 12 tertiary driers, and 4 copper cooling rolls. The cylinder machine was equipped with 8 vats and made boards 170 cm. wide and weighing 400 to 1,000 grams per square meter.

Wet machine board for shoe counters and wax-containing waterproof board for roof insulation was made from waste paper and sulphite screenings in a small mill with a capacity of only five tons per month. The pulp was disintegrated in kollergangs, mixed with rosin and alum in small beaters and run into a board on one of four small cylinder wet machines. The montan wax was also added to the beaters for the waterproof boards. The boards were air dried in a shed in summer and dried with steam-heated air in a chamber in winter. After drying, the boards were passed 4 or 5 times through a two-roll heated board calender for densifying, flattening, and imparting a glaze.

Hard Fiberboard

During the period of 1937 to 1940 several mills were erected in Germany for the production of a hard fiberboard similar in appearance and purpose to the American product, Masonite. This board was used as a supplement and substitute for plywood in building construction. The two mills inspected were operated in conjunction with plywood mills. One of the uses for the board was in walls for house construction. A strictly war-time application was that for boarding over broken windows. Although insulating and other hard fiberboards have been made for years from fiberized wood and other fibers, this particular development appeared to be new. The development was apparently based in part on the use of waste wood. An interesting development based on hard fiberwood was that of a resin-filled board covering a range of densities and properties *(12)*. The board itself was to be manufactured by the same methods discussed in this section. The project, however, was apparently in the developmental stage.

The equipment and procedures employed were conventional to the industry. The plants seen, however, were distinguished by their excellent layouts, maximum mechanization, high quality of equipment, and general air of modern efficiency not common to most other German pulp and paper plants.

Defibering Procedure. Softwood pulpwood from reasonably close sources was the raw material used. Spruce was preferred because pine gave difficulties due to high resin content—one mill used on the average 70% spruce and 30% pine. Little provision was made for removing bark from the pulpwood, this operation normally being done in the woods. The pulpwood at present in storage had not been barked, but considerable bark had been removed in handling. (Bark was reported to be undesirable in the final product, but considerable bark was observed in the samples viewed at the mills). In one mill two rossers (Miag-Braunschweig) were used for a rough removal of bark from pulpwood up to 6 inches in diameter. The pulpwood was reduced to chips 15 to 20 mm. long in conventional disk chippers. (For example, one mill had one 3-knife chipper with a 2 meter diameter disk and a capacity of 200 "raum" meters per day). The chips from the chipper were conveyed by air to vibrating flat screens for removal of oversize and fines. This step was apparently considered to be important. The oversize chips were conveyed to a distintegrator of the hammer type (Miag) and then directly to the line of accepted chips. The fines were burned. In one mill an auxiliary flat vibrating screen was placed near the top of the chip bins to remove slivers passing the primary screens.

The chips were conveyed continuously from the chip bins to the defibrators which are similar in design to the well-known Asplund defibrator. The chips were forced into a steam chamber under 10 atmosphere pressure (185°C.) and then passed continuously by means of a worm to a disk refiner run at 500 r.p.m. The defibered material or pulp passed through a pressure release valve to a cyclone for waste steam recovery and thence by a worm to pulp screens. The defibrators had a productive capacity at 6 to 10 tons of pulp per day and the mills investigated had three, four and five units. Certain difficulties were reported in connection with their operation. Disks needed to be regrooved after 300 hours service. Stray metal entering the system caused serious breakdowns, and the pressure chamber required periodic replacement due to corrosion from the wood acids.

The pulp was diluted to a consistency of approximately 1% for screening on vibrating flat screens (Voith, Heidenheim or Hermann Finkh, Reutlingen—the latter being considered especially satisfactory and having a screen surface 1 x 1.5 meters for a daily production of over 5 tons) with holes 6 to 8 mm. in diameter. The oversize was either defibered in a stone roll beater or recirculated to the defibrator feed. The pulp was then pumped to conventional cylinder thickeners for dewatering to 2% consistency, following which it passes to chests. In these chests either rosin size or phenol-formaldehyde resin was added and precipitated with sulphuric acid. The boards contained 4% rosin size or 2% synthetic resin. The stock then passed to machine chests for supplying the board machine.

Boardmaking procedure. The pulp suspension supplied to the board machine was controlled for consistency by a regulator (Arca, Sweden) whose operation was considered satisfactory in one mill and unsatisfactory in another. The board machine itself was a conventional fourdrinier ("langsieb") type and the board produced trimmed 1.7 to 2.0 meters. In one case the wire was 18 mesh (per cm.) and ran at 5 meters per minute. During the last third of its travel on the continuous wire the formed board was compressed between the main fourdrinier wire and a top wire through a bank (5) of press rolls. The board leaving the couch roll section was approximately 26 mm. thick and had a moisture content of 70%. The board then passed through two bronze press roll sections, was trimmed and passed over a roll for applying paraffin emulsion to its lower (smooth) surface. The paraffin application amounted to 0.8 to 0.9% of the dry board. The board next passed over a roller table, was cross-cut to length,

and passed thence to a stacker which elevated the panel to a rack with a capacity of 15 or 20 panels. This rack was then rolled into a press where the panels were pressed at 180 to 200°C. under a pressure of 35 to 50 kilograms per square centimeter for 20 to 30 minutes. The panels in their rack were then rolled into a humidifying chamber where their moisture content was brought to 6 to 10% in 18 to 24 hours.

Properties of the hardwood. The properties of the board are given below:

Type of Board	Specific Gravity	Tensile Strength, kg/cm.²	Bending Strength, kg/cm.²
With 4% rosin size	1.0	250	350
With 2% synthetic resin (Bakelite)	1.0	700	400

Special Paper Products

In addition to the conventional uses for paper as such in Germany, a multitude of products used paper (or pulp) as their base. Some of these products are described in the following paragraphs.

Wet-strength, waterproof, and specially treated papers. It is apparent that many of the applications were derived from the textile field. Although the phase of the German paper industry involving these treatments was not investigated thoroughly enough as to amount of production and use to draw a factual conclusion, the general opinion in the paper industry as a whole appeared to be that the developments and applications in this field were not outstanding. Nevertheless, complete knowledge in this field is highly desirable and it has been recommended to British technicians planning to make further investigations in Germany that this field be thoroughly covered. The fact that packaging problems in Germany were less difficult than in America probably had a retarding effect on developments in the protective paper field.

Wet strength papers as such apparently aroused considerable interest in Germany. As far as could be determined, however, the production of this type of paper was small. The use of I. G. Farben's "Polymin" by beater addition was of particular interest. Laboratory scale research on the wet-strengthening effect of this resin had been started by Dr. Brecht at the Darmstadt High School and some of his results are discussed under the section on "Research and Development" in this report. Mill-scale experiments were conducted at Waldhof-Unterkochen in which Polymin was added in amounts of 0.5 to 3% of the pulp at a pH value of 7 or over (addition limited to neutral or alkaline media). The results of the tests indicated an increase in wet web strength, but the wet strength of the finished paper was not affected. The main benefit was an increase in the abrasive resistance of paper. This was taken advantage of in an oil-resistant paper (see below). Experimentation on Polymin was also reported to have been done by the Feldmuehle group, but this was not able to be checked since the mills are in the Russian occupation zone. There seemed to be considerable confusion as to the results from the use of Polymin. This confusion was probably due to the newness of the application and insufficient work to evaluate its advantages and disadvantages. Dr. Jayme of the Technical High School at Darmstadt felt that the claims of I. G. Farbenindustrie were exaggerated. Other synthetic resins like those of the phenol-formaldehyde type also had been tried at Unterkochen but the results were not encouraging. This work was apparently very sketchy and the operators said that German developments in this field were far behind those in America.

Spin paper for binder twine and woven paper products was given a wet-strength treatment of a kind by impregnating this paper with paraffin during the moistening procedure prior to spinning. The impregnating liquor was essentially an aqueous paraffin emulsion made by adding 3% "Adsorbin" or other paraffin base material to the moistening bath. The moisture content of the paper leaving the bath was approximately 40% and the paraffin content of the spin paper was probably a maximum of 1%.

An oil and gasoline resistant paper was made at Unterkochen by coating paper (600 to 1,000 grams per 3 square meter) on a roll coater with animal glue (or gelatine) followed by formaldehyde (5% solution) and drying the paper first on cylinder dryers and then in a hot air chamber. The rate of running the coater was 4 meters per minute. The use of Polymin P in this product has already been mentioned.

Paper coated by spraying with polyvinyl chloride was a war-time development of Waldhof. A glassine base paper was used and the product found application as a food wrap. Glassine paper (30 grams per square centimeter) was also duplexed with paraffin or wax (montan wax) both to glassine paper or to strong sulfite bag paper.

Asphalt and paraffin impregnated and duplexed papers were made by conventional methods for use in roofing, insulation, and packaging. In one mill visited (Uflacker, Dusseldorf) the base for tar paper was waste paper impregnated with 40 to 50% tar. Asphalt duplex paper had a kraft paper of 40 to 50 grams per square meter as a base. A paraffin impregnated paper had the same kraft paper base and had a paraffin content of 10 grams per square meter.

At another mill (Schlochauer-Hamburg) asphalt coated duplexed and impregnated paper was made for packaging binder twine and for linings of woven paper bags. The base paper was a high quality, Swedish kraft crepe paper of 90 to 130 grams per square meter. The asphalting operations were conducted according to conventional procedures. At the same mill a machine for additional creping of paper (for "X-creping" it was understood) was under construction.

The use of montan wax in a wet machine board for roof insulation was described earlier in the report.

A paper treated to afford protection against mustard gas has been reported *(13)*. Crepe paper was passed continuously through a bath containing carbon di-isocyanates (Desmodur T of I. G. Farbenindustrie) and polyurethanes (Desmophen 1100 and 1200 of I. G. Farbenindustrie) and dried in 5 minutes at 120 to 130°C. A second coat of a slightly modified composition was applied in a similar manner. Some 50,000 square meters were produced.

Standard vulcanized fiber made by treating paper with zinc chloride for use as self-sealing gasoline tanks has also been reported *(14)*.

Wood fibers were used to extend asbestos in a blend with asbestos and glass wool for a fabric *(15)*, (because of asbestos shortage). The fiber mixture was carded, spun into yarn and woven into fabrics. Another application of wood fibers in the building trade was their use in a mixture with waste paper, Swedish wood pulp, and Portland cement for flat and cor-

rugated sheets for roofings and sidings *(13)*. These materials were formerly made from asbestos fibers and Portland cement. Groundwood pulp was used as a rag substitute in the manufacture of felts and used as a base for roofing papers.

Paper coated with polyisobutylene has been reported to be used for cable insulation *(16)*. Another use for wood pulp was in a cheap leather substitute *(16)*. The fibers were beaten and mixed with poloyacrylic ester or polyvinyl acetate emulsion for this purpose.

A waterproof abrasive paper was made by coating a kraft paper with a waterproof lacquer using a simple roll coater. The lacquer used in the mill visited (Starcke at Melle) was a "Bindemittel" of I. G. Farben. As near as could be determined (plant chemist uncertain about product) the abrasive adhesive was an acetyl guamine product *(17)*. The kraft base paper weighed 100 to 160 grams per square meter depending on the grade of abrasive paper. The lacquer coated paper from the coater passed under a narrow spout extending the width of the machine for applying the abrasive. The paper then passed through a crude drying chamber approximately 12 feet long and 8 inches in height for preliminary drying with hot air. The partially dried paper was then run in a festoon-type fashion through a large room heated with steam coils. During the drying operation the lacquer penetrated the paper and impregnated it uniformly. The coater and subsequent equipment handled a sheet 1 meter wide at a rate of 10 to 12 meters per minute. Dry abrasive papers for hand and mechanical work were made in a similar fashion using animal glue as the adhesive. The secondary drying room was not necessary for the dry papers.

Binder and insulation twine and woven bags from spin paper. Spin paper, whose manufacture has been described earlier in this report was twisted at a number of spinning mills into a thread or twine for its ultimate use as binder twine or for electric wire insulation and for weaving into mesh bags and possibly other textiles. The spin paper coming to the spinning mill was in the air-dry condition, 10% moisture content. It was necessary, however, to increase this moisture content to 40% for the twisting operation. This was done, as mentioned earlier, by running the paper through an aqueous bath which generally (but not always) contained a paraffin emulsion ("Adsorbin") for increasing the waterproofness of the paper. When binder twine was to be made, the bath also contained 0.75 to 1% preservative "Preventol" (used at Schlochauer). Following the moistening bath the paper rolls were slit into widths corresponding to the size of thread desired. The threads were described in terms of meters length per kilogram, and the standards were 1.8, 2.1, 2.4 and 2.7 by 1,000 meters per kilogram.

The twisted paper for binder twine was given a final paraffin coating and smoothing by passing the twine over a block of paraffin and then over a large heater drier roll. This roll served to dry the paper to the desired moisture content of 15%, to distribute the paraffin evenly on the surface, and to impart a smooth surface to the twine for efficient use in grain binding machines. Because of the relatively high moisture content of the binder twine, a requirement for successful use in the binders, it was necessary to package the twine in waterproof asphalt duplexed paper. A more detailed discussion of the German binder twine industry is given elsewhere *(18)*.

At another mill (Scheufelen) the spin paper with a moisture content of approximately 40% taken directly from the paper machines, slit to the proper width, and twisted into thread without further moistening or without addition of paraffin or preservative. This thread was rather fine and was used as the initial layer of insulation on electrical wire.

The twine from spin paper was also woven by conventional methods into a mesh textile for use in bags lined with waterproof paper (asphalt coated or duplexed). In one mill (Schlochauer) the threads in one direction were twisted paper and in the other direction thread from flax.

Paper laminated plastics. The use of paper laminated plastics in the electrical insulation industry and to some extent in the bearing industry is of long standing in Germany, as it is in America. There appeared to be no evidence of the use of paper laminates for airplane or other construction involving the physical strength of the material. There were a few reports of resin-filled pulp molded products being made. There were made, of course, molding powders using wood flour as a filler.

The manufacturing procedures used in producing paper laminated plastics for the electrical industry were judged by the methods used at the New-York-Hamburg Gummiwaren Co., Hamburg, who were reputed to produce a high quality product in this field. This company was a relatively small producer of these plastics. Other larger mills were Dielectra at Porz, Venditor at Troisdorf, a mill at Wahn, and Siemens at Berlin. The base paper used at the Hamburg plant was a kraft paper weighing 30 to 120 grams per meter. Sulphite paper was considered to have too low a tensile strength. The specifications for the paper called for it to be unsized and free from acid. This paper was treated in conventional impregnators with a cresol-formaldehyde resin instead of phenol-formaldehyde because the former was cheaper, (the creosol resin cost 37 marks per 100 kilograms in comparison with 98 marks for the phenol resin).

This mill had one conventional impregnator and one coater for applying a resin coating on one side of the paper. The coater handled two sheets, 250 cm. wide. The resin coated paper was dried in a steam heated chamber at 120 to 130°C. The volatile content in the paper as measured at 140°C was 10%.

The coated or impregnated paper was pressed with the desired number of laminations at 150°C under a pressure of 160 to 180 kilograms per square cm. Two presses were used. A finished panel 550 by 1050 mm. could be produced in one and a panel 1050 by 1100 mm. in the other. (There were no indications that low pressure laminates were made). The finished plastic had a resin content of 30 to 40% and a specific gravity of 1.4. This resin content was raised to 50% for use of the plastic in the tropics. The properties of the plastic met minimum specifications set up by the electrical insulation industry.

An interesting post-war product was a thin, fairly translucent laminate for use as a glass window substitute. This product was made from bleached kraft paper weighing 90 grams per square meter. The paper was impregnated and pressed conventionally.

A resin treated paper for molding was made to a small extent for the automotive industry. The extent of application is not known. This molding paper was made from a paper weighing 350 grams per

meter. It was understood that the air between thinner resin treated sheets interfered with the molding. A minor use of a paper base laminate as a material of construction was as a reinforcement for bolt holes in plywood aircraft construction. *(19)*.

The molding powders produced at the Hamburg mill were based on 40% resin and softwood flour. Hardwood flour was considered inferior. A resin content of 50% was also considered to be better than 40%. The hardening agent in these molding powders was hexamethylenetetramine.

Pulp and Paper Testing

Most of the pulp and paper mills visited had control laboratory facilities for testing raw materials and intermediate and final products. The laboratories varied from small office-like rooms with a minimum of equipment to spacious air-conditioned rooms which were well-equipped and staffed. Some of the mills also had research laboratories, which will be described in the next section. The test methods apparently followed for the most part the standards set up by the "Verein der Zellstoff—und Papier Chemiker und Ingenieure." These and various other test methods are given in Sieber's book *(2)*. The testing of pulp viscosity was apparently somewhat uncertain because Waldhof, Aschaffenburger *(20)*, and I. G. Farbenindustrie employed some methods in addition to the standard method *(21)*.

A rapid viscosity test used by Aschaffenburger was as follows: (1) pulp sample dewatered; (2) pulp dehydrated with 93% ethyl alcohol; (3) solvent removed in air-cooled oven; (4) 1 gram of sample dispersed in 50 cm. of cuprammonium solution by hand shaking; (5) viscosity determined with Ostwald pipet. Beech required a test time of 5 and spruce 10 minutes.

Determination of the strength characteristics of pulp was done according to standard methods using a Jokro mill and a Rapid-Kothen sheet machine.

Although the control laboratories of several mills were not investigated because of damage or use as living quarters, those at Scheufelen, Unterkochen, Baienfurt, and Fleischer were first rate. Except possibly for the Brabender tester for automatic moisture determination, the apparatus and equipment appeared to be conventional.

Research and Development

The great share of the research and development work in the German pulp and paper industry during the last ten years was probably directed toward the solution of problems affecting the war effort, directly or indirectly. However, a certain amount of fundamental work of a long time nature was apparently done, in addition to the practical researches.

Institutional Research

A considerable amount of pulp and paper research and development during this period was conducted in the so-called technical high schools. A leading institute of this sort was the Technical High School at Darmstadt. Research at this institute relating to the practical aspects of the industry were understood to be under the direction of Prof. Walter Brecht. An outline of the research projects conducted at the Darmstadt institute during the period from 1938 to 1945 seems to indicate that the problems facing the German pulp and paper industry were (1) the use of fibers other than those obtained from wood itself, especially peat, lignite, and annual plants; (2) The reuse or recovery of fibers already having had primary use; (3) evaluation and development of purified pulp products; (4) improvements in the mechanical wood pulping process, especially with regard to use of groundwood pulp without addition of chemical pulp; (5) improvements in writing and printing papers; (6) development of a paper having equal strength in both directions of the paper; (7) development of spin paper for binder twine, especially from sulfite pulp, and (8) development and evaluation of special papers. According to Prof. Brecht the work of a more fundamental nature undertaken at the Institute involved (1) studies on the basic nature of wet-strength in paper and the development of a testing machine for measuring the wet-web strength of paper; (2) the development of the fundamentals and the application of these principles to a device for producing on a paper machine a paper having a strength ratio of cross to machine direction approaching unity; (3) studies on the basic principles involved in screening pulp; (4) development of a sulphite paper suitable for spinning into binder twine; (5) studies on the reuse of waste paper; (6) continuous processing of pulp in an edge-runner; (7) improvements in the burring of grindstones in producing a groundwood pulp suitable for use without chemical pulp; (8) multistage beater processing of pulp; and (9) heat resistance of paper. Most of the papers listed in the outline are available in Prof. Brecht's files. It is recommended that interested parties investigate these reports further. Copies of several of the reports have been sent to the Official Despository, Forest Products Subcommittee.

Unfinished experiments started in Prof. Brecht's laboratory late in the war period included an evaluation of the wet-strengthening properties of I. G. Farbenindustrie's resin, "Polymin", and development of a two-stage process for sharpening grindstones for producing a high-strength groundwood pulp. The first results from the experiments with Polymin indicated the following: (a) groundwood pulp freeness was increased from 80 to 60° Schopper-Riegler by the addition of 1% resin; (b) wet tensile strength was maximum when 3% resin was present and amounted to 50% of the dry strength; (c) when 3% resin was present, the wet breaking load for groundwood was increased from 0.5 to 2.5 kg. (d) the resin did not change the moisture absorption characteristics appreciably; (e) the resin was believed to increase wet web strength. The two stage sharpening of grindstones was based on obtaining deep ridges with a coarse sharpener in the first stage and then smoothing off the surfaces of these deep ridges in the second stage. This stone surface was claimed to give long, flexible fibers, but with a minimum of fiber bundles. The second stage of the sharpening procedure was difficult because the grits on the grindstone tended to break out. A low pressure with a fine grit carborundum sharpener was most successful. The Voith Company was interested in this development and was working with Brecht on it.

Important developments in the German pulp and paper industry during the war period in the opinion of Prof. Jayme, also of the Darmstadt High School, are reported elsewhere *(23)*.

Research on the pulping of tropical woods was conducted by Prof. Runkel at the Research Institute for World Forestry at Reinbeck *(24)*.

Mill Research

Research on the development of wet-strength

papers was apparently conducted up to nearly the end of the war by Dr. Doerr at I. G. Farbenindustrie's Ludwigshafen plant.

During the war period work done in the research laboratories of Waldhof-Mannheim included the following projects:

1. New raw materials for pulping, such as esparto and karaya.
2. Studies on the variables of sulphite pulping.
3. Prehydrolysis of wood prior to kraft pulping for the purpose of obtaining a fermentable liquor and a high alpha pulp. (The development discussed in section on "Purified Pulps").
4. Improvements in yeast production from sulphite waste liquors.
5. Purification of wood pulp to make it more suitable for cuprammonium and acetate artificial silk.
6. Byproducts from sulphite waste liquors, such as tanning agent, adhesives, and plastics; no success with lignin plastics.
7. Improvement in pulps for viscose rayon.

The research done in the laboratories of Scheufelen at Oberlenningen was reported to be concerned with the products being manufactured. For example, experiments were done on paper coatings.

Hardwood Utilization

The distribution of the main species in the German forests in 1937 was approximately as follows: Pine, 44%; spruce, 25%; beech, 13%; oak, 5%; fir, 3%; other, 10%. Although these data show a high ratio of softwoods to hardwoods, the importance of the little used beech in the forest and commercial economy in Germany was apparently recognized in the middle nineteen-thirties and its successful use in sulphite pulp (and a small amount in nitric acid pulp for chemical derivatives) has already been described. In addition to this important outlet for beech, certain other limited uses for this species, as well as for poplar, were found in the paper industry. These uses were primarily as filler pulps, since the hardwod pulps were generally considered to be too weak (because of short fibers) for usual papermaking purposes. It was understood that some 30,000 metric tons of poplar sulphite pulp were produced annually in the East Prussian area. An additional amount of beech groundwood was reported to be used as filler pulp; presteaming of the wood was said to improve the pulp strength. A small amount of beech sulphate pulp was produced at Johannesmuehle and was understood to have some papermaking value. However, it was also felt that its use for chemical purposes was more promising. Scheufelen had made plans for a soda pulp mill which was to use beech wood (60 tons per day). This pulp was to be bleached and used as a filler pulp in book paper. The pulp furnishes at Scheufelen indicated a considerable use of beech sulphite pulp.

The dense nature of beech wood was considered to be an advantage in its favor. Earlier in the report it was mentioned that a "raum" meter of beech weighed some 380 kg. in comparison with 310 ks. for spruce. Another source of information gave the following comparison on the same basis: beech, 410 to 420 ks.; spruce, 270 to 300 ks. There was also considerable interest in Germany in the rapid growth possibilities of poplar wood. In Germany spruce requires 70 to 80 years to grow to pulpwood size, whereas it was claimed that poplar could be grown to pulpwood size in 25 years.

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16. CIOS Report, Item Nos. 9 and 22, File No. XXIX—62, "Investigation of German Plastic Plants," by Dr. G. M. Kine, Col. J. H. Rooney, Lt. Col. J. W. Crawford, Major T. Love and Mr. F. J. Curtis.
17. CIOS Report, Item No. 22, File No. XXVIII—62, "Glossary of some German names for chemical products," by Harry A. Curtis.
18. British CIOS Report, "Paper binder twine," by Dr. A. M. Malcolm.
19. FIAT Report, "Production and fabrication of glued wood products in Western Germany," by H. O. Fleischer and R. M. Seborg.
20. Papierfabrikant, 1940, No. 13/14.
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22. CIOS Report, Item No. 22, File No. XXVI—11, "I. G. Farbenindustrie A.G. plant at Hoechst/Main," by Maj. R. E. Richardson, J. C. Kern, R. C. Murray and R. W. Siedhoff, July 3, 1945.
23. FIAT Report, "Interviews with several German wood chemists," by J. F. Saeman, E. J. Locke and G. K. Dickerman.
24. FIAT Report 6, "Research Institute for World Forestry," by H. O. Fleischer and R. M. Seborg.

Starch for Paper Coating

Starch for Paper Coating is the title of the third in the series of Monographs issued by the Technical Association of the Pulp and Paper Industry (120 pp. 6 x 9, paper cover). It is the combined work of 22 authors, all experts in their respective fields.

The data presented, which is authoritative, is the result of monthly meetings of the TAPPI Coating Committee under the chairmanship of Dr. Werner Kaufmann, vice president of Kupfer Bros. Company and of the Starch Subcommittee under the chairmanship of J. C. Bullard of the Corn Products Refining Company.

Its 21 chapters cover such subjects as: Chemistry of Starch in Relation to Its Use in Paper Coating; Starch Modifications; Physical Examination of Starch Products: Viscosity Determination of Starch Dispersions; Preparation and Handling of Converted Starches; Enzyme Conversion for Paper Coating; Interchangeability of Starches and Other Adhesives; Methods of Application of Starch Coatings; Base Coating Formulas Using Starch as the Adhesive; Strength of Starch Coatings; Water Resistant Starch Coatings; Production of Corn, Tapioca and Potato Starches; Waxy Maize Starch, Sago Starch, Wheat Starch and Flour; Viscosity Properties of Coatings.

Copies of the Monograph have been distributed to the members of the Technical Association. Nonmembers may purchase the Monograph from the Technical Association of the Pulp and Paper Industry, 122 East 42nd Street, New York 17, N. Y., at $5.00 per copy. ($6.00 in Canada and other countries).

Peter J. Massey to Receive TAPPI Medal

The fifteenth gold medal of the Technical Association of the Pulp and Paper Industry will be awarded to Peter J. Massey, general manager of the Bryant Paper Company Division of the St. Regis Paper Company, Kalamazoo, Mich. This award will be made at the annual luncheon of the Technical Association at the Commodore Hotel, New York, N. Y., on February 27, 1947.

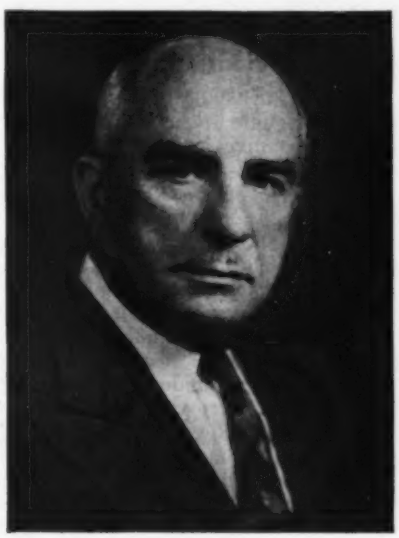
The TAPPI medal is the principal award made in the pulp and paper industry and is given, after long and careful consideration, to an individual in recognition for having made an outstanding contribution to the technical advancement of the industry. In making the 1947 award to Mr. Massey recognition is given to his pioneer efforts and subsequent activity in the development of the process of coating papers at high speed on the paper machine.

Mr. Massey was born at Jacksonville, Florida on June 29, 1883 and has devoted most of his life to the printing and paper industries. From 1904 to 1913 he was a pressroom superintendent for the Butterick Publishing Company, New York City. From 1913 to 1919 and from 1935 to 1936 he was general manager of the W. F. Hall Printing Company in Chicago. From 1929 to 1935 he was Executive Vice President of the Seaman Paper Company in Chicago. From 1936 to 1940 he was general manager of the Combined Locks Paper Company, Combined Locks, Wis., and from 1940 to 1946 he was assistant to the President of the H. P. Smith Paper Company in Chicago where he developed a number of special packaging papers used by the Army and Navy during the war. Late in 1946 he became general manager of the Bryant Paper Company in Kalamazoo, then owned by the magazines Time and Life and since purchased by the St. Regis Paper Company.

Mr. Massey was the first editor of Paper Industry in Chicago and was one of the organizers and first Secretary-Treasurer of the American Pulp and Paper Mill Superintendents Association.

In 1933, while with the Seaman Paper Company, he developed and proved the practicability of high speed paper machine coating at the Bryant Paper Company and in 1933 and 1934 he installed and supervised machine coating on a full commercial scale at the Consolidated Water Power and Paper Company mill at Wisconsin Rapids, Wis.

The further advance and refinement of the machine coating process has been a spectacular development of the past ten years and the use of machine coated papers by a number of the leading national periodicals has been a contribution to the reading public. In addition to providing a better printing medium it has overcome the international shortage of chemical wood pulps through adaptation of groundwood content papers for high grade magazine printing.



PETER J. MASSEY

Market Research, Topic at Delaware Valley Meeting

Robert S. Aries, Field Director of the Northeastern Wood Utilization Council, spoke on marketing research as an aid to market development at the meeting of the TAPPI Delaware Valley Section which was held at the Engineers Club in Philadelphia, Friday night, January 3, 1947.

Mr. Aries stressed that the technical department should interest itself in market research since it is to their own advantage to develop products which will meet competition and return a profit. At the present time, conditions are such that any product will sell but it should be realized that a competitive market will ultimately develop and those firms that are prepared will have an advantage.

In a limited survey, it was indicated that the paper industry has not yet discovered the advantages of market research and, because most of the experts in the field have little or no knowledge of the paper industry, an opportunity is offered to the mill development personnel.

Mr. Aries gave as some of the advantages of a market research program: it makes the technical staff more salesminded, decisions can be based on facts, the competitor's position can be evaluated together with customer preferences, improved customer relations, time is saved in that unsound projects are rejected before too much time is expended upon them, and there is a beneficial psychological effect on the employees with realization that they are working for a sound, progressive company.

Each product should be evaluated and the following points were given as a starting basis: 1. what are the specifications required, 2. what are the consumption statistics, 3. where is it used, 4. what are the competitive articles, 5. are there any patents, 6. what methods are required for its production, 7. what will it cost, and 8. how and through what agencies will it be sold.

The following were present at the meeting: E. J. Albert, R. S. Aries, H. C. Becker, R. T. Bingham, A. L. M. Bixler, G. K. Boger, Jr, H. C. Brill, K. W. Britt, P. G. Bruno, C. F. Cair, John Carson, L. B. Carothers, C. M. Connor, J. C. Dieffenderfer, R. C. Durham, J. C. Eaton, P. C. Evanoff, G. A. Farrah, M. L. Gallagher, Jr., J. D. Gercke, Frederick Goetz, J. W. Goldring, R. E. Green, L. V. Hans, Harry Hulmes, A. H. Jones, Werner Kaufman, Daniel J. Lorden, S. J. Leishman, J. Macadam, C. S. Maxwell, J. A. McCormick, D. K. McCurdy, E. P. McGinn, Louise E. McGrath, George Morin, P. H. Newcomb, J. A. Paciell, E. R. Padavic, Maxwell Rettner, John Roslund, Allan Schenck, W. K. Schlotterbeck, Wm. M. Shoemaker, L. J. Smith, R. R. Smith, J. J. Steinbinder, E. I. Stoker, H. H. Street, L. M. Sutherland, D. R. Traill, D. R. Watt, J. P. Weidner, Ray Wilcox, W. R. Willets.

TAPPI Notes

Charles W. Cassell, formerly of the Bryant Paper Company, is now supervisor of engineering on felt and roofing, The Barrett Div., Allied Chemical & Dye Corporation, New York, N. Y.

Melvin J. Killian, formerly of the Combined Locks Paper Company, is now technical director of the Bryant Div., St. Regis Paper Company, Kalamazoo, Mich.

George J. Clark, formerly of the Veterans Hospital, Biloxi, Miss., is now technical assistant in the training center for sanitary engineers, U. S. Public Health Service, Columbus, Ga.

Ingmar Jaatinen of A. Ahlstrom O/Y has been transferred to the Pihlava, Finland mill of this company.

Heikki Sihtola of Veitsiluoto O/Y, has been transferred to the Kemi, Finland mill of this company.

Robert E. March, formerly of the Institute of Paper Chemistry, is now with the Scott Paper Company, Chester, Pa.

Col. A. S. Hocker is now with the 1179 Engineer Construction Group, APO 503, c/o Postmaster, San Francisco, Calif.

Miss Carola Trittin, formerly of the American Coating Mills, is now research chemist for the Ward Paper Company, Merrill, Wis.

Howard J. Blake, formerly of the Rogers Corporation, is now with the Wood Flong Company, Hoosick Falls, N. Y.

Charles H. Reese is now vice president in charge of manufacture of the Nekoosa-Edwards Paper Company, Fort Edwards, Wis.

Harold Murdock, who is now connected with the AMG direction of the Japan pulp and paper industry, writes that the situation there is critical and has organized a Japan Pulp and Paper Associaiton as well as a Japanese TAPPI. The enthusiasm for the formation of the Japanese TAPPI has been very great and a publication of technical papers is expected in the near future.

The TAPPI Ohio Section will meet on February 6th, probably in Middletown, Ohio, and will conduct a panel meeting on "What the War Has Taught About Starch Applications."

The annual meeting of the Technical Association will be held at the Commodore Hotel on February 24-27, 1947. Since rooms are no longer available at the Commodore members are requested to write to the following hotels for accommodations: Belmont Plaza, Lexington, Winthrop, Beverly, Beaux Arts, Tudor, Vanderbilt, 70 Park Avenue, Sheraton, George Washington, Kenmore Hall. To save time a letter should be sent to several hotels and any reservations not needed should be cancelled.

Robert A. Springer, Technical Director, The Cowles Company, Cayuga, New York, a 1939 graduate of Syracuse University, where he also served as instructor. He was formerly employed by the Solvay Process Company, Solvay, New York.

Thomas W. Gardner, Assistant Plant Engineer, Michigan Carton Company, Battle Creek, Michigan, a 1946 graduate of Purdue University. He was with the United States Army Air Force for three years.

David B. Gearhart, Sales Engineer, General Electric Company, Grand Rapids, Michigan, a 1927 graduate of Iowa State College. He has been with his present company since graduation at their plants at Schenectady, New York, and Detroit, Michigan.

R. W. Stephenson, formerly of the Halifax Paper Company, is now with Howerton Gowen Company, Roanoke Rapids, N. C.

Carlton E. Marble, formerly of the Container Corporation of America, is now with the Waldorf Paper Products Company, 2236 Myrtle Ave., St. Paul, Minn.

H. C. Smolens, formerly of the Becco Sales Company, is now with the Hydrox Chemical Company, 227 W. Huron Street, Chicago, Ill.

T. G. Batchelor, formerly of the Hercules Powder Company of Canada, Ltd., is now assistant director of sales for the Papermakers Chemical Department, Hercules Powder Company, Wilmington, Del.

Miss Margaret M. Sutton has replaced Rolf Buchdahl as the official representative of the Sun Chemical Company, New York, N. Y., in the Technical Association.

Chemical Specialties

The Chemical Publishing Company has recently issued an interesting and useful book entitled "Chemical Specialties," compiled by H. Bennett, technical director of the Glyco Products Company and editor of the Chemical Formulary. (826 pp. 5½ x 8½). Although it is written primarily for the benefit of individuals and small companies that might be interested in manufacturing specialties on a small scale its scope is so broad that it should find rather wide interest.

It attempts to teach the elements of chemistry to business men who have not had a technical education. Among the subjects covered are chemicals classified as to use; raw materials, their handling, legal restrictions, formulations, costs, etc.; processing procedure and equipment; marketing; general business principles including insurance, business law, labor relations, credits and collections, financing, records and bookkeeping; technical help from books, catalogs, trade papers, consultants and patent attorneys; laws and regulations relating to pure food, poisons and insecticides. There is also an interesting appendix of useful tables. The book is illustrated and is specific regarding many sources of supply.

Copies may be obtained from the Book Department of the Technical Association of the Pulp and Paper Industry, 122 East 42nd Street, New York 17, N. Y., at $12.50 per copy.

Chemistry for the Executive

The Reinhold Publishing Company has recently issued a layman's guide to chemistry entitled "Chemistry for the Executive by Ralph K. Strong, professor of chemistry, Rose Polytechnic Institute, Terre Haute, Indiana (445 pp. 6 x 9). The entire text is handled as a dialogue in which Mr. Executive acts as the interlocutor and the author as the respondent. The executive calls his chemist into his office each day for a half-hour interview. It is necessary for the chemist to make his responses clear and fully understandable, however, no attempt is made to simplify the responses as might be necessary if they were given to an immature individual. The entire field of elementary chemistry is covered in a way that provides for easy reading and established the clear understanding desired by a layman in this subject.

Copies may be obtained from the Book Department of the Technical Association of the Pulp and Paper Industry, 122 East 42nd Street, New York 17, N. Y., at $6.00 per copy.